Industrial Equipment News

FOUNDED 1933

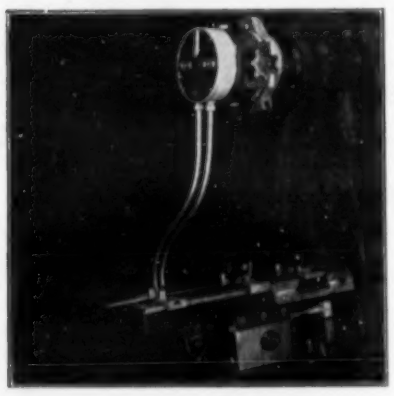
ORIGINAL REPORTER OF *What's New* IN EQUIPMENT, PARTS, MATERIALS

AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

If you write maker identify as **IEN - 13266**

PRESS TOOLS . . Strip stock feed, hydraulic design, stroke to 12 inches

Source: JACO DEVICES INC.
91 High St., Dept. IEN, Hingham, Mass.



Made in England

Hydraulic pump and control mounts on the end of a punch press crankshaft with pressure and return lines leading to this new reciprocating Hydrafeed. The pump can be set to vary the volume of oil displaced for immediate and infinite adjustment of the feed length from zero to maximum movement. The action is smooth and can be set for a dwell to a maximum of 60 deg. on each half of the press stroke. Speed is constant. Two sizes handle strip stock to 6 and to 12 in. in width and to 1/32 in. in thickness. Strokes are maximum at 6 and 12 inches.

The slide table is equipped with carbide faced gripper boxes, open side to permit loading. The grippers can be reversed to either push the material through or pull it. They can be adjusted for varying work requirements or disengaged to assist in initial set up.

The feed table can be raised or lowered in a 4-in. range. It can be moved away from or up to the press in a 6-in. range. It can be attached to any side of the press table since it is mechanically independent of the press crankshaft. Accurate fits take the place of packings at the only two points where oil leakage might occur.

If you write maker identify as **IEN - 13267**

FEEDING . . Air vibrated unit advances work pieces on circular path

Source: SCHLACK MFG. CO.
24623 Middlebelt Road, Farmington, Mich.

18 inch housing

The housing of this new Model B-18 feeder, with its spiral track and weighted conical base, is fitted with a pneumatic vibrator and rides upon a central spring surrounding a stud on the plate type base. Between the housing and the base are four pivoted connecting rods that convert vertical action of the vibrator against the supporting spring into a component of circular movement. This movement causes the parts to feed outward inside the housing. Eventually they reach the spiral track along which they move at a speed in proportion to the speed and amplitude of the vibration. The parts are oriented and excess units are diverted back into the feeder for another try by means of selectors mounted above the track.

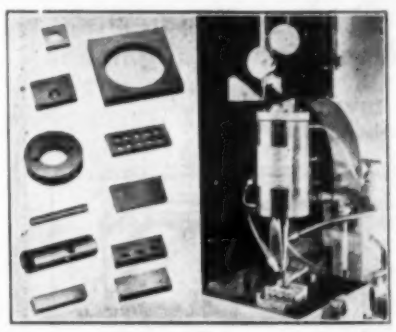
The feeder can be supplied to operate in clockwise or counterclockwise direction and to mount single, double or multiple tracks. Parts made of metal, wood, rubber, plastic, glass, paper can be handled. Weight is about 150 pounds. Air consumption is 12 cfm. at 80 pounds. List price is about $450. After the housing has been loaded with work pieces and the air turned on, there is no need for further attention.

REMEMBER YOUR CHRISTMAS SEALS

If you write maker identify as **IEN - 13268**

MACHINING . . Ultrasonic vibrator employs abrasive to cut hard materials

Source: SHEFFIELD CORPORATION
719-23 Springfield Ave., Dayton 1, Ohio



To 30,000 cps.

Ultrasonic generators and transducers, to "vibrate" intricate shapes into materials such as glass, tungsten, carbides, hardened steel, precious stones, previously described IEN-7802-53, are now being applied in a new line of machining equipment. The company will design and manufacture this equipment, employing the generators and transducers for specified application, in which an inexpensive tool made of soft steel operates with an abrasive, at high vibrating frequency, to make precision cuts in the hard materials.

If you write maker identify as **IEN - 13269**

LIGHTING . . Incandescent fixture, explosion proof and interchangeable

Source: APPLETON ELECTRIC CO.
1713 Wellington Ave., Chicago 13, Ill.

Simplifies servicing

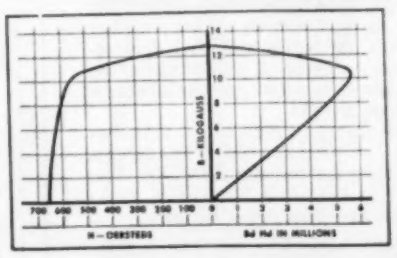
One minute is sufficient to relamp or change the lamp size on the company's new design of Series AA-51 vented explosion proof fixture. One Unilet body has been standardized to fit both 60 to 200-watt and 300/500-watt dome unit assemblies. These units can be made up, ahead of application.

They are carried up into place by a wired handle that attaches to brackets on the side of the housing. These same brackets are employed as a fulcrum to loosen a fixture for removal or to finally tighten one in place.

If you write maker identify as **IEN - 13270**

MAGNET . . Alnico alloy concentrates high energy in small size

Source: THOMAS & SKINNER STEEL PRODUCTS CO.
1163 E. 23rd St., Indianapolis 7, Ind.



The diagram illustrates the characteristics of the company's new Alnico 5Cb, which provides the highest energy for a given size of any permanent magnet material the company has produced so far. It is intended for electrical, electronic and industrial applications in which weight and space limitations are factors in product design.. It is supplied in finished forms.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

DECEMBER, 1953
VOL. 21 No. 12

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- ☐ *Production, Mr.* .....
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If you write maker identify as **IEN - 13271**

INSULATING . . Perforated panels of corrugated aluminum for ceilings

Source: REYNOLDS METALS CO.
2553 S. Third St., Louisville 1, Ky.

To modernize old structures

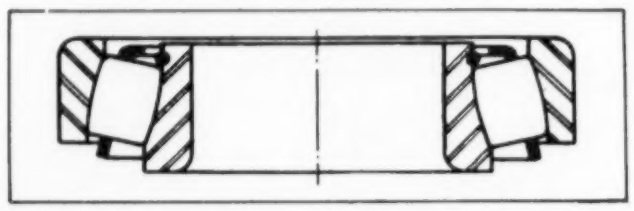
New panel to absorb noise is made of perforated aluminum, corrugated for strength. It is employed with glass fiber insulation to form a ceiling that not only absorbs noise but also insulates against heat transmission. It provides a means to introduce conditioning air when the aluminum and the glass fiber are separated from each other in the overhead construction. Support is on aluminum channels and angles in an assembly to suit a given installation.

The panel material measures 0.024 inch. It is available in 33¾-in. width for net coverage of 32 in. and in 6 and 8-ft. lengths. It can be supplied in natural aluminum or with a baked white finish. The supporting angles and channels can be similarly treated. The glass fiber blanket ranges from ½ to 2 in. in thickness and is mounted with various backings to suit specific needs. Installation is by franchised acoustical contractors. The new material is being distributed through Elof Hansson, Inc., 220 East 42nd St., New York 17, N. Y.

If you write maker identify as **IEN - 13272**

BEARING . . Spherical roller design compensates freely for misalignment

Source: HYATT BEARINGS DIVISION
1933 Carroll St., Harrison, N. J.



Hyatt Barrel Bearing

The company announces general availability of its angular contact spherical roller bearing, which it initially developed some years ago for automotive application. The single-row design, shown in the illustration, is available in 11/16 to 3-in. bore with corresponding outside dimensions at approximately 1¾ to 4½ inches. Width of the smallest unit is ⅝ inch.

The bearing takes a combination of radial and thrust loading. Misalignment causes the two races to assume independent axes of rotation. Load capacities and speeds are comparable with other designs of angular contact bearing for which this unit is now available as a replacement size for size.

The rollers are assembled in a cage and are held in place on the inner race by a snap ring. The outer race is free to assume an angular position with reference to the inner race to correspond with a given misalignment. It will operate in this position without any tendency to bind.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 13273**

It can lift 25 tons* up to 5 inches is only 10 inches high, weighs 38 lbs.

The "Mighty Mite" (No. 2510-C-2)
**other sizes handle 10 to 50 tons*

This precision made, ball-bearing journal jack is a favorite in industrial plants, construction and engineering companies, building movers, railroads and ship yards. The "Mighty Mite" is easy to carry, simple to operate, quickly raised and lowered, and is absolutely safe and dependable. It can be operated on any plane. A solid steel handle (1⅛" x 36") with pinch bar ends, which can be used as a pry bar, is furnished with each jack.

Call your distributor for complete details and information on prices and delivery or write the oldest and largest manufacturers of lifting jacks for bulletin AD12-M, The Duff-Norton Manufacturing Co., P.O. Box 1889, Pittsburgh 30, Pa. Canadian plant—Toronto 6, Ontario.

DUFF-NORTON JACKS
"Giving Industry A Lift Since 1883"

If you write maker identify as **IEN - 13274**

SEALED-FOR-LIFE NEW DEPARTURES

Compact design . . . practically zero maintenance . . . are just two of many advantages made possible by New Departure Sealed ball bearings. No wonder so many designers specify N-D Seals. In fact, more than 255 million have been used in hundreds of applications throughout industry! Write for complete information.

NOTHING ROLLS LIKE A BALL

NEW DEPARTURE
BALL BEARINGS

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONNECTICUT
Plants also in Meriden, Connecticut, and Sandusky, Ohio

If you write maker identify as **IEN - 13275**

oops!

Almost had a pretty big blaze. Good thing there was a Kidde CO_2 Portable around. Picked it up, pointed the nozzle, pulled the trigger. That's all. No fire. Hands hardly dirty.

Kidde
Walter Kidde & Company, Inc.
1236 Main St., Belleville 9, N. J.

If you write maker identify as **IEN - 13276**

A SURE WAY to get fast, low-cost metal joining . . .

PREPLACE THE BRAZING ALLOY

A BRAZING PRODUCTION EXPERT IS AT YOUR CALL

Without obligation one of our field engineers will call and tell you if, where and how you can use the preplacement formula to advantage. Write and say when.

ALLOY PREPLACEMENT is a key factor in the tried and proved EASY-FLO and SIL-FOS low-temperature silver alloy brazing formula that gives you *any brazing production you want* at surprisingly low cost. Using a fast heating method and a production set-up that keeps assemblies with preplaced alloy moving to and through the heating station are the other factors. This formula eliminates the human element from the actual brazing and gives you fast, reliable production with unskilled labor.

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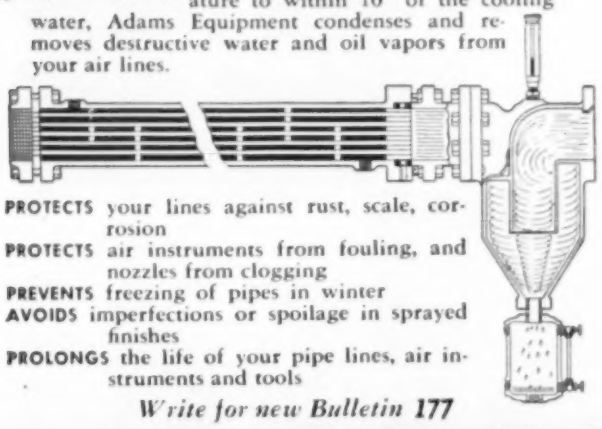
You Can be Sure of Clean Dry Air for your Compressed Air Tools

3500 Gallons

1 YEAR'S water extraction from air lines equipped with Adams Aftercooler and Cyclone Separator.

with **ADAMS** Aftercooler and Cyclone Separator

● Reducing compressed air temperature to within 10° of the cooling water, Adams Equipment condenses and removes destructive water and oil vapors from your air lines.



PROTECTS your lines against rust, scale, corrosion
PROTECTS air instruments from fouling, and nozzles from clogging
PREVENTS freezing of pipes in winter
AVOIDS imperfections or spoilage in sprayed finishes
PROLONGS the life of your pipe lines, air instruments and tools

Write for new Bulletin 177

R.P. ADAMS CO., INC. 219 E. PARK DRIVE BUFFALO 17, N. Y.

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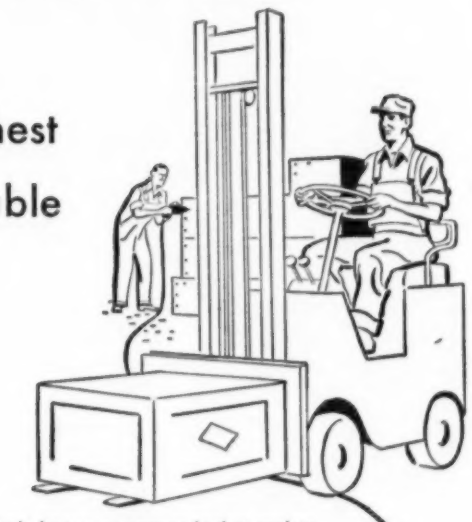
SECURITYFLEX

the toughest portable cord



Securityflex's heavy neoprene jacket resists water, oil, crushing and abrasion. As a result —Securityflex* lasts longer, increases the use of fine tools and saves you money by requiring fewer replacements.

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52426

the right cable for the job **ANACONDA®** WIRE AND CABLE

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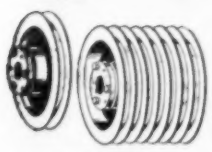
To BROWNING-ize means to ECONOM-ize



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RIGID AND FLEXIBLE COUPLINGS

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SPLIT TAPER BUSHINGS

WRITE FOR Catalog #GC101 and the name of BROWNING DISTRIBUTOR near you.

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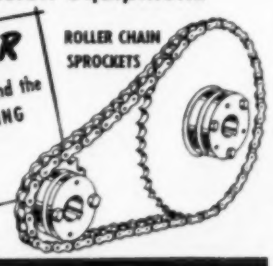
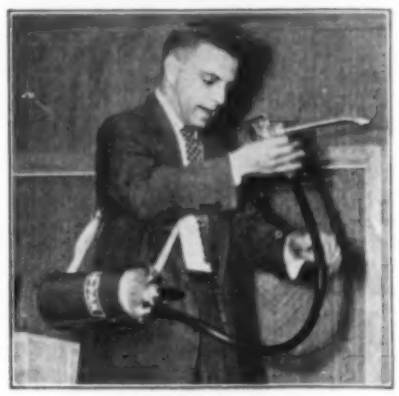


BROWNING MANUFACTURING COMPANY MAYSVILLE · · · KENTUCKY

If you write maker identify as IEN - 13280

LUBRICATING . . Portable unit holds 5 lb. of air pressurized grease

Source: ARO EQUIPMENT CORP.
107-11 Madison St., Bryan, Ohio



Convenient to carry

Aro-Pak consists of a pump equipped cylindrical tank with a hose, lever controlled nozzle and carrying strap. The hand pump is employed to prime the unit with air pressure for grease delivery into lubricant fittings on a machine. One priming is sufficient to deliver one-half of a capacity load of grease. Weight loaded with 5 lb. of grease is 15 pounds. The assembly includes a visual grease level indicator, swivel nozzle with a pressure booster. List price is about $25.

A companion unit, known as Aro-Fil, consists of a hand pump mounted in a drum cover that applies on a 25 or 40-lb. original grease container. This unit can be employed to fill the Aro-Pak if the operator does not desire to handle the filling operation manually. List price for the Aro-Fil is about $11.

If you write maker identify as IEN - 13281

CASTINGS . . Made of nickel alloy, service temperature to 2,200 deg. F.

Source: BLAW-KNOX COMPANY
2050 Farmers Bank Bldg., Pittsburgh 22, Pa.

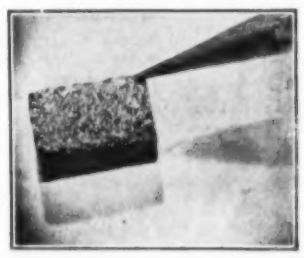
Permits high heat head

Castings made of heat resistant alloy NA22H are now available in the form of centrifugally cast tubes and cast parts to specification following the release of nickel by the Government. The castings are suited particularly for furnace and power boiler use subject to high temperatures.

If you write maker identify as IEN - 13282

BEARING . . Sintered bronze-tin impregnated with solid film lubricant

Source: BOOKER-COOPER INCORPORATED
8485-89 Melrose Place, Los Angeles 46, Calif.



Permanent lubricant

Patent has been applied for on a new lubricant impregnated bearing material that can be molded and machined to specification. The new material employs ferrous or non-ferrous metals combined with a thermosetting resin into which lubricating pigments of molybdenum sulfide, graphite, lead, silver are combined to meet given bearing requirements. The bearing can be employed dry or with oil although no service oiling need be employed.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13283

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for . . . CHEMICAL BURNS • CLOTHES ON FIRE

READY FOR INSTANT USE

EYE WASHING FOUNTAIN

Leading industrial doctors advise immediate washing with plenty of running water as the best first aid treatment for any chemical in the eyes. Fountain works automatically by resting forehead on the valve and provides a constant stream of water to both eyes.

Easily installed.

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Allows an individual to thoroughly drench *himself* with gallons of water by leaning against operating chain which attaches to floor.

Write for Bulletin No. 86 for further data on both items

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INDUSTRIAL PRODUCTS COMPANY

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The BROWN COMPANY, Quality Paper Makers of Berlin, New Hampshire, said this in an operating report on one of their Kraft Mill Lime Kilns after changing over from conventional oil lubrication to LUBRIPLATE No. 130AA. Huge savings like this cannot be overlooked. It's worth your while to see what LUBRIPLATE Lubricon can save you.

1. LUBRIPLATE reduces friction and wear
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3. LUBRIPLATE is economical to use

Write today for case histories of savings made through the use of LUBRIPLATE in your industry.

PLANT MAINTENANCE AND ENGINEERING SHOW

LUBRIPLATE DIVISION

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DEALERS EVERYWHERE, consult your Classified Telephone Book

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- Exclusive collet holds lead in bulldog grip, prevents it slipping back into holder.
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CASTELL Imported Lead

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803 Articles
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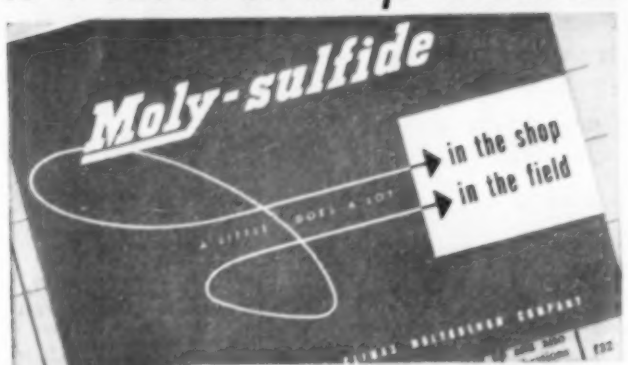
154 ideas on ways to use...



154 varied applications of molybdenum sulfide in the shop and in the field are described in a new booklet now available. This solid-film lubricant has demonstrated unique anti-friction properties under conditions of extreme pressure, high velocity, elevated temperature, or chemical attack.

The 40-page booklet contains the records of solved lubrication problems—some might solve your own.

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The lubricant for extreme conditions

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VOL. 21 DECEMBER, 1953 No. 12

Your Next Ten Minutes

This little piece is to call your attention particularly to our "year end" editorial letter, enclosed between pages 2 and 3 of this December issue. We hope you will read it and then take the next ten minutes to check it, make your notations on it and return it to us. It is addressed, stamped, ready to fold, seal and put in the mail.

We know, through your original requests to be added to our mailing list and your subsequent verifications, that the products described and advertised in Industrial Equipment News are interesting to plant men in every division of industry. We have put emphasis, as a result, on those new products that have potential as well as known uses across all industry.

We believe, through our observation of the portion of your total inquiries which you have sent through us, that you have multiple interests and responsibilities. If we can verify that belief, through your replies on this year end letter, we will know we are on the right track for 1954 in IEN's product information service.

Every industrial operation must have a base, a place to work. Therefore we start the outline with Buildings and Properties. We follow this start, in logical order, with Heating and Ventilating to make the work place habitable, with Lighting and Communicating to permit normal activity. Then we add Power and Transmission.

The established, never completed, working base requires stocking with raw, semi-finished and finished products, purchased from others, on which to go to work. That points to the heading Materials, Parts, Supplies. These things must be received, stored, distributed, worked upon, assembled, stored again and shipped, so we add Materials Handling.

Production involves the choice, installation and operation of the equipment, tools and direct facilities particularly designed for each industrial division. Your responsibilities in this function will be located normally in one particular industrial division rather than in several. Accordingly we set up Production under the generally accepted division headings so you can check that one, if we are right, which interests you. Orderly operation, to manufacture most of our complex modern products, calls for the next functional division in our list, Production Control over performance, quality, quantity, sequence.

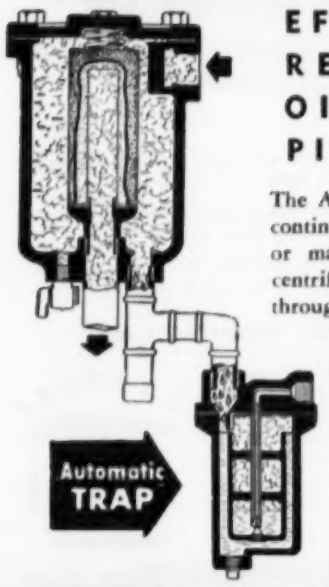
Finally we come to the business of keeping the wheels turning smoothly, of correcting trouble when it does occur and, in many plants a very considerable installation of engineering personnel and equipment to design and build special equipment and facilities.

Our outline includes two columns of squares in which we hope you will check your main interests and indicate divisions in which you have made or initiated purchases. To the right we have provided open space in which to note specific purchases you can recall by subject and source. There also we hope for your comments on things we could be doing that we are not doing now in IEN's product information service for you. Your next ten minutes—what do you say?

W. E. Irish.

If you write maker identify as IEN - 13288

Poro-Stone Filtration
FOR COMPRESSED AIR



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Write for complete data Bulletin 177

R. P. ADAMS CO., Inc.
219 E. Park Drive, Buffalo 17, N. Y.

ADAMS *Poro-Stone* AIR FILTER

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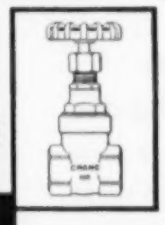
NEW
BRASS GATE VALVES



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Model J-

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Company.....
Address.....
City.....Zone....State.....

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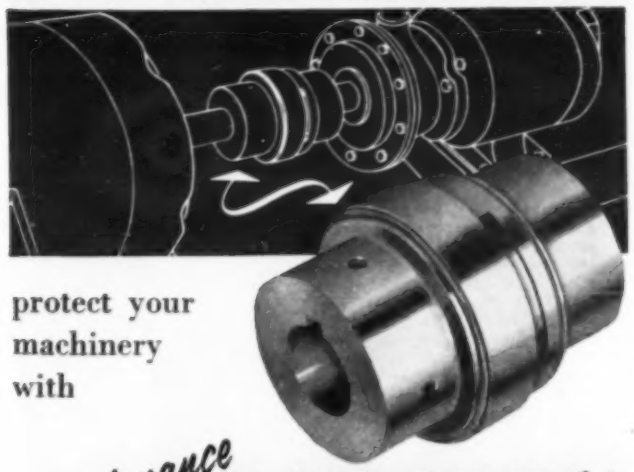

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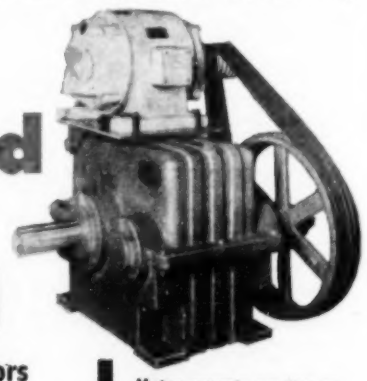

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Company.....
Address.....
City.....Zone...State.....

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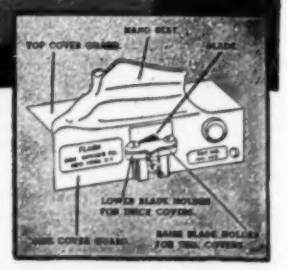
Amazing
FLASH BOX OPENER
Opens Any Carton Quicker . . . Cleaner



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THE ONLY CARTON OPENER THAT GIVES YOU ALL THESE ADVANTAGES:
Penetrates exactly under the outer cover thickness • Protects contents of carton • Cuts clearly to permit re-use • Prevents accidents • Saves time • Eliminates fatigue. ***Already accepted by leading industries.***

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VISE . . Multiple jaw adaptor adjusts to work on applying pressure

Source: DESIGN AIDS CO.
N. 7th St., Dept. IEN, Newark 7, N. J.

For given work

Individual jaws, mounted beneath a retaining key, are backed up by floating vertical rollers in this new vise adaptor. One jaw is employed for each work piece that is to be held on a milling machine or grinder. When pressure is applied, the jaws contact the work pieces on the rollers, assume holding positions that equalize the pressure on each piece.

The adaptor is available with 5 to 10 jaws in widths measuring ⅜ to 1½ inches. The top of the adaptor is normally closed with a steel cover to prevent entrance of chips or dirt. Parts are hardened but can be supplied soft if specified.

If you write maker identify as IEN - 13297

PAINTING . . Pigmented resins for articles such as clips, fasteners

Source: PARKER RUST-PROOF CO.
2177 E. Milwaukee Ave., Dept. IEN, Detroit 11, Mich.

Both finishes are corrosion proof

Parcolac 101 Black and 102 Aluminum are new pigmented phenolic resins for centrifuge or spray application on metal articles such as clips and fasteners. The material produces a black finish, the other finish resembles aluminum. Both apply on products that have been treated with Parco. The application is followed by baking at about 300 deg. F. for 20 min. or less. The materials are supplied unreduced and are thinned according to instructions prior to application.

If you write maker identify as IEN - 13298

HANDLING . . Pressurized tank holds 2½ gal. of gasoline and oil

Source: R. E. CHAPIN MFG. WORKS INC.
27-31 Liberty St., Batavia, N. Y.

Safe and handy

A few strokes of the built-in brass hand pump on this new Model-137 Moto-Fil portable tank are enough to build delivery pressure on the mixture of gasoline and oil that the tank is designed to carry. Delivery is through a hose and trigger controlled nozzle to service engine driven equipment in a plant or yard.

The oil resistant hose measures 4 ft. in length. The tank is 12 in. in diameter and 10 in. in height. The pump is mounted in a threaded cover that can be removed to provide a 2-in. fill opening. Two additional models hold 2 and 5 gallons. List prices are about $9 to $12.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13299

THE JOHNSON CORP., 946 Wood St., THREE RIVERS, MICH.

If you write maker identify as IEN - 13300

OFFERS YOU OVER 15,000 TYPES, SIZES AND RATINGS OF ELECTRIC HEATERS FOR ALL YOUR NEEDS

FAST • EFFICIENT • ECONOMICAL • EASY TO INSTALL

This Booklet Shows You How To Save Money with Electric Heat
It's packed with ideas you'll find useful. Get your copy now!

Regardless of your heating problems, there are Chromalox Electric Heaters that give you the heat you want when you want it. Compact Chromalox Units provide dependable, around the clock service; they are easily installed in existing or new equipment. Operating temperatures can be quickly regulated manually or thermostatically to fit the work requirements in your plant.

Industrial Div., EDWIN L. WIEGAND CO., 7505 Thomas Boulevard, Pittsburgh 8, Pa.
See Chromalox Radiant Heaters Advertisement Page 11

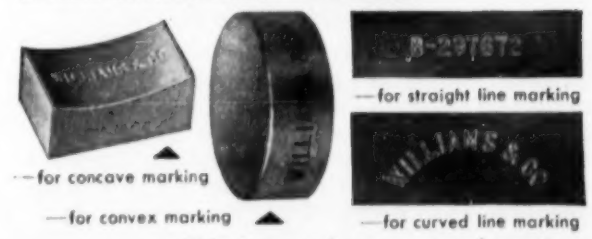
CHROMALOX
ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN - 13301

For Safe, Fast, Economical Marking . . .

"SAFETY"
WEDGE GRIP STEEL HAND STAMPS

Made with two or more characters, trade mark designs, Gothic, Roman, or script style lettering to suit any requirement. Sizes from 1/64" and up. Non-spalling, non-mushrooming features assure long, safe service on all types of marking.



Write for quotation on your requirements.

Mecco SAFETY MARKING TOOLS — **M.E.CUNNINGHAM CO.**
1039 CHATEAU STREET, PITTSBURGH 33, PA.

If you write maker identify as IEN - 13302

Get These 3 Low Maintenance Features

1 *Wide Open Air Flow* — No enclosed external air passages to clog. Easy to clean with cloth, brush, air hose or vacuum.

2 *Cast Iron Construction* — Cast iron frame and conduit box resist corrosion. Well-suited to outdoor operation.

3 *Pre-lubricated Bearings* — Ball bearings are double-shielded type, pre-lubricated at the factory. In-service lubrication if necessary.

GET COMPLETE INFORMATION on Allis-Chalmers motors for indoor and outdoor service — complete with Allis-Chalmers coordinated control — from your nearby A-C Authorized Distributor or District Office, or write for Bulletins 51B7286 and 51B7149, Allis-Chalmers, Milwaukee 1, Wisconsin.

A-4133

ALLIS-CHALMERS

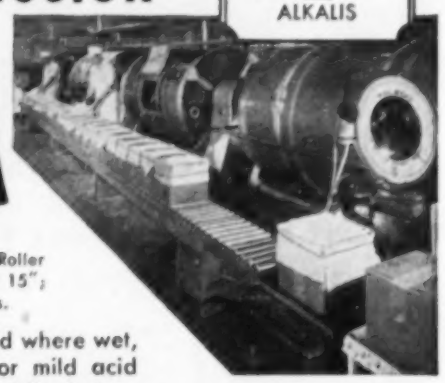
If you write maker identify as **IEN - 13303**

METZGAR "NYLO-ROLL" CONVEYORS

Resist CORROSION

LACTIC ACID
FOOD ACIDS
MILD INDUSTRIAL ACIDS
BRINE, SALT
ALKALIS

NYLON BEARINGS ON STAINLESS STEEL AXLES



Gravity, or Live Roller Models. 11½"; 15"; 18"; 24" widths.

Recommended where wet, alkali, salt, or mild acid conditions rapidly destroy ordinary ball bearings.

For full information Describe your needs

METZGAR CO.

MFGRS. OF WHEEL & ROLLER GRAVITY & LIVE ROLLER CONVEYORS • POWER BELT CONVEYORS • SWITCHES • ACCESSORIES & REEL DOLLIES

METZGAR CONVEYORS

417 DOUGLAS, N. W.
GRAND RAPIDS 4, MICH.

If you write maker identify as **IEN - 13304**

Use MONORAIL CRANES

- WHERE SPACE IS LIMITED
- TO HANDLE VARIABLE JOBS
- FOR LOW MAINTENANCE COSTS

These are just a few reasons why American MonoRail Cranes are being installed in an ever-increasing number of plants. Your American MonoRail representative will tell you more about MonoRail Cranes—ease of handling—smooth travel—strength—safety interlocks—power operation and *interlocking carrier service between and beyond the craneways.* This information is available without obligation.

SEND FOR YOUR COPY C-1 BULLETIN

AMERICAN OVERHEAD HANDLING EQUIPMENT MONORAIL COMPANY
13111 ATHENS AVENUE • CLEVELAND 7, OHIO

If you write maker identify as **IEN - 13305**

OPTICAL BARGAINS

IMPORTED STEREO MICROSCOPE at 50% Saving!

Wide, 3 Dimensional Field
Excellent Depth for Working Under Magnification!

$160 Val. ONLY **$85** Pstpd.

Now, for the first time—a fine, imported Binocular Microscope at a substantial saving. Used for inspections, counting, checking, etc. Fixed 3 power objective with 3 pairs of matched eye-pieces to give you powers of 15X, 30X, 45X. Rack and pinion focusing. Interpupillary adjustment. Instrument is removable from base for mounting on equipment or bench. Working distance—2¾". Adjustable for extra height. Fine hardwood case included. Recommended for lab, shop, factory or home use. We guarantee complete satisfaction or your money back.

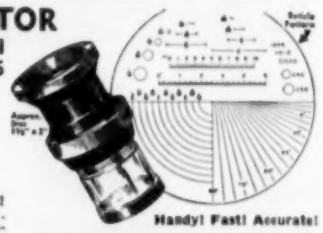
Stock No. 70,011-AS ..... **$85.00 Postpaid**
Send check or M.O. or order on open account.

POCKET COMPARATOR

Check, Measure, Inspect Small Parts and Dimensions with 6 POWER MAGNIFICATION MEASURES

• Angles • Radii • Circles • Linear

in both decimal inches and millimeters.



Handy! Fast! Accurate!

First time available at such low price! EDSCORP POCKET COMPARATOR. Fine, imported measuring magnifier—approx. size 1½" x 2"—for fast, accurate inspection of intricate parts. Used to check layouts, machining on tools, dies, gauges—to check threads, chamfers, small holes. In optical work for checking flaws such as bubbles, seeds, scratches, pits and digs. For scientists—in determining with of spectrograph lines. In photography—measuring and focusing at ground glass. Instrument comes in protective leather case. Money-back guarantee!

Stock No. 30,061-AS ..... **$22.50 Postpaid**
Send check or M. O. or order on open account.

BARGAINS GALORE! Get FREE CATALOG "AS"

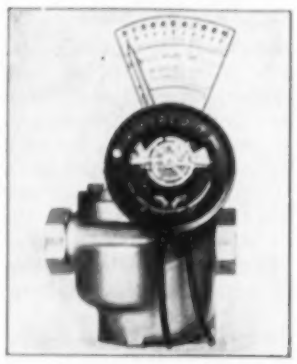
If you haven't seen our big, FREE Catalog, you don't know what you're missing. Fantastic variety—never before have so many lenses, prisms, optical instruments, and components been offered from one source. Positively the greatest assembly of bargains in all America. Imported! Domestic! Telescopes! Microscopes! Hand Spectroscopes, Prisms, Lenses, Reticles, Mirrors and dozens of other hard-to-get optical items. Write for FREE CATALOG "AS".

EDMUND SCIENTIFIC CORP. • Barrington, N. J.

If you write maker identify as **IEN - 13306**

FLOW INDICATOR . . Valve design closes signal circuit at set rates

Source: HENSZEY COMPANY
Henszey St., Dept. IEN, Watertown, Wis.



Indicates gpm.

Mercoid switch in sealed assembly is now employed on the company's flow indicator, previously described IEN-8860-43. The switch closes a signal circuit when flow reaches a predetermined low or high within the indicator range.

The indicator itself is a valve type unit containing a metering plug in its globe type flow port. Rate of flow determines position of the plug in the port and corresponding position of the pointer on the fan type scale at the top of the assembly. Plug and pointer are lever and shaft connected in the indicator housing. Seven sizes rate 10 to 600 gpm. Pressure is to 300 and 600 lb. in two series.

If you write maker identify as **IEN - 13307**

DRIVE . . V-belt sheaves, cast iron, bushed bore, 7 to 18.4 in.

Source: BROWNING MFG. CO.
16 Chester St., Maysville, Ky.

Dimension data in Form 1986

Eleven sizes, from 7 to 18.4 in. in diameter, have been added to the company's lines of cast iron V-belt sheaves. The new units are available in 2, 3 and 4 grooves for Type-B V-belts. Each is taper bored to take a malleable split bushing for interchangeable application on a range of shaft sizes from ½ to 1¾ in. in $\frac{1}{16}$-in. increments. List price for the sheave is $9.30 to $33.20. The bushing adds $1.20.

If you write maker identify as **IEN - 13308**

DRILLING . . Work holding clamp rides the column on a drilling machine

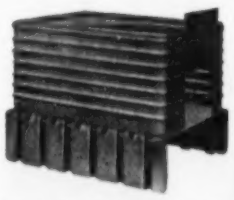
Source: CLARK & SAWYER INC.
2010-14 E. 7th St., Los Angeles 21, Calif.

Swings into place

Sta-Put designates a new clamp that secures on the column of a drilling machine. It mounts a U-shaped finger that is brought down by turning a knob to secure a piece of work on a drilling machine table. It is designed for use in the place of C-clamps, vises, V-blocks. The pressure member can be adjusted between 7¼ and 8¼ in. from the drilling machine column. The clamp body is made of aluminum. Weight is 3 pounds.

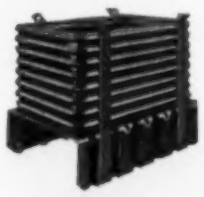
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 13309**



Type PB-650 box and platform units with sliding end door.

Preferred... THROUGHOUT INDUSTRY



Type PB-120L box and platform.

Republic STEEL BOXES and SKIDS

Type B-80C box unit equipped for crane handling; corrugated bottom.

● Designed to give maximum strength and rigidity, Republic Steel Boxes and Skids are preferred throughout industry for their ability to carry the load and keep things moving. Specify "Republic" when you want the best in steel boxes and skids.

Write for illustrated catalog.

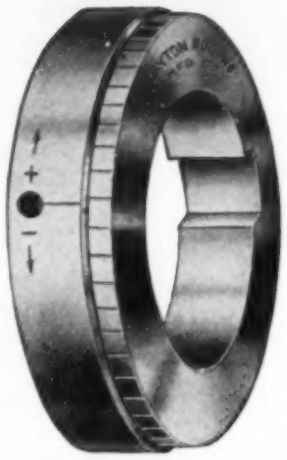
REPUBLIC STEEL

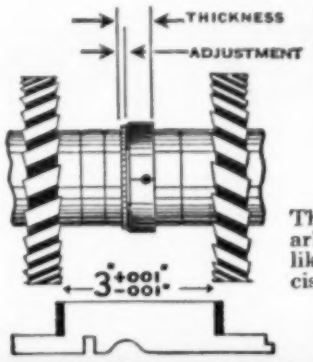
PRESSED STEEL DIVISION
REPUBLIC STEEL CORPORATION
6200 TRUSCON AVE. • CLEVELAND 27, OHIO

If you write maker identify as **IEN - 13310**

SAVE TIME on GANG MILLING SET-UPS

Dayton Rogers *hardened and ground, adjustable micrometer spacing collars are considered the last word on all types of milling machine set-ups for gang milling, straddle milling and similar operations. They are quickly and easily adjusted to the plus or minus positive adjustment. The collar is so designed that it gives the minimum over-all thickness with the maximum adjustment, graduated in .001".*





They are stocked for cutter arbors from ⅝" to 2". You'll like the speed, the precision, and the time saved!

Write Today For More Information!

DAYTON ROGERS *Manufacturing Company*
2836 13th AVE. S.
MINNEAPOLIS, MINNESOTA

If you write maker identify as **IEN - 13311**

HERE'S WHY

PUROX Trade Mark

BLOWPIPES *COST SO LITTLE TO USE AND MAINTAIN*

SELF-SEATING VALVES
Reseat scored valves when turned tight.

RUGGED HANDLE ASSEMBLY
Built for long, trouble-free service.

SLIP-FIT "O" RINGS
Perfect gas seals every time.

MIXER IN EACH HEAD
Resists backfires, eliminates burnouts.

SWAGED, PURE COPPER TIPS
Heads snap in handle. No wrench needed.

The Purox W-202 blowpipe (illustrated) is available with 13 standard welding heads and 3 multiflame heating heads, all of the snap-in type. Ask your LINDE jobber for a demonstration or write for further information. LINDE AIR PRODUCTS COMPANY, a Division of Union Carbide and Carbon Corporation, 30 E. 42nd St., New York 17, N. Y. In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto.

get it from your LINDE jobber

The terms "Purox" and "Linde" are registered trademarks of Union Carbide and Carbon Corporation.

If you write maker identify as **IEN - 13312**

NEW! FAST! EASY!

PRINT FACSIMILE LABELS DIRECT TO CONTAINERS

Here's the new system that eliminates labels and the old stencil board—ink brush method of addressing and marking shipping containers. With the new Web-O-Print JC-3 hand printer and a Kustom-Kut (die-cut) stencil, you can print both facsimile label and shipping information direct to cartons or boxes *in one operation* . . . at the rate of 40 to 50 cases per minute!

Kustom-Kut stencils are pre-cut to print your label or form. Address and other variable information are typed in . . . stencil is quickly attached to Web-O-Print . . . label and address are then printed on container in a single movement.

Web-O-Printing is a fast, clean one-hand operation. Prints on rough and cylindrical surfaces. Leaves a sharp, compact, fade-proof and waterproof print. Can be easily blocked out for re-shipping.

FREE SAMPLE PRINT Write today for a sample print and information on trial offer. No obligation.

Weber LABEL AND MARKING SYSTEMS
Division of Weber Addressing Machine Co.
Dept. IE-5, Mount Prospect, Ill.

If you write maker identify as IEN - 13313

CHAMPION E-X-P-A-N-D-I-N-G MANDRELS

give speed to every set-up

The flexible sleeve, mounted on tapered arbor, expands automatically to fit the hole. Inserted by hand — no arbor press needed. Always an exact, positive, concentric fit. Locked by a single mallet blow. Unlocked the same way. CHAMPION Expanding Mandrels are used in machine shops around the world. Save time, cut production costs, whether the job calls for machining one piece or a thousand.

Precision Model has expansion range of .010". Available in regular sizes to fit holes from ½" to 3" diam. Holds work to tolerances of .0002" run-out. Guaranteed for precision grinding, turning and milling operations.

Standard Model maintains close tolerances, handles material of any length bore, hard or soft metals — from thin tubes and bushings to heavy castings and forgings. A set of fourteen will fit every hole from ½" to 9½" diam.

CHAMPION *Expanding Mandrels can be made in special shapes and sizes to fit any specifications. Quotations on request. Write for descriptive folder today.*

WESTERN TOOL & MFG. CO., INC.
Dept. 22 Springfield, Ohio

If you write maker identify as IEN - 13314

EASIER LIQUID LEVEL READINGS WITH IMPROVED WIDE VISION REMOTE INDICATOR

A new-type face on the Yarway Remote Liquid Level Indicator now permits side as well as head-on dial readings.

This improved visibility makes it possible to check boiler water levels from most any position in the control room, or wherever the Yarway Remote Indicator may be installed.

The Yarway Indicator is a manometric type with automatic temperature compensation. Level readings are instant and accurate because the indicator is operated by the boiler water itself. Indicating mechanism is never under pressure. There are no stuffing boxes.

Over 8,000 Yarway Remote Liquid Level Indicators are successfully operating throughout industry—primarily for indicating boiler water levels, but also for many other liquid level applications, and for superheater pressure differential indicators aboard ship.

Write for free Yarway Indicator Bulletin WG-1823.

YARNALL-WARING COMPANY
122 Mermaid Ave., Philadelphia 18, Pa.

YARWAY *remote liquid level indicators*

If you write maker identify as IEN - 13316

SWITCH . . Snap acting design is lever operated for limit duty

Source: R. B. DENISON MFG. CO.
4224 Hough Ave., Cleveland 3, Ohio

Bulletin LS 53 A

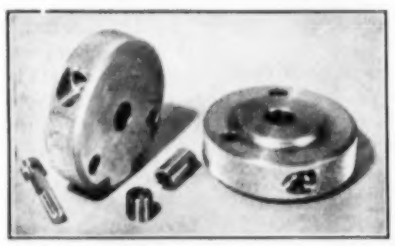
Loxswitch Series L-100 is a new single-pole double-throw limit switch with quick-break, cushioned-make silver contacts. It is operated by a wheel equipped lever mounted in graphite bronze bearings. The action builds up pressure in a spring and releases this pressure at a predetermined point so the switch rotor breaks one pair of contacts and closes the opposite pair at an exact point independent of speed of the lever movement. The balanced light weight rotor is locked in each position. Operating parts are protected within one of the two compartments in the housing, the other compartment contains the wiring terminals. Both are inside a gasketed aluminum housing that is dust, oil and water proof. Connections are brought in through an opening at the top threaded for ¾-in. conduit.

The switch is normally assembled for counterclockwise operation and spring return. It can be set up in opposite arrangement, or the return spring can be omitted, for maintained contact in either direction. Any of these conditions also can be set in the field. Four contact ratings are from 6 to 1.2 amp. on 110 to 600-volt ac. Inrush rating is 60 to 12-volt ac. The lever moves 10 deg. to trip and is provided with 25 deg. of over-travel on either side of the tripping range. Overall dimensions are about 2¼ by 1¾ by 5¼ inches. Standard operating lever length is 1½ inches. List price is $13.25. A transparent cover can be specified without extra cost.

If you write maker identify as IEN - 13317

GAGE . . Thread ring blanks carried in stock ready to finish

Source: HURON MACHINE PRODUCTS
6250-54 Monroe Blvd., Dearborn, Mich.



For you to finish

The company announces availability from stock of a line of thread ring gage blanks made to American Gage Design Standards. The blanks make it possible for gage manufacturers to minimize delivery time since these manufacturers can purchase the blanks, finish bore the center hole, cut the threads and heat treat. The blanks are made of Graph-Mo oil hardening tool steel.

Twelve sizes cover a decimal range, minimum at 0.059 to 0.240 inch and maximum at 4.010 to 4.760 inch. Overall diameter is 1 to 7¼ inches. Overall width is ¼ to 1 inch in a "thin" range. All but the three smallest units are also available in an overall width of ¾ to 1½ inches. List price is $1.52 to $23.90 each in the ¼ to 1-in. width.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13318

Logan UNIVERSAL COUPLINGS permit "hooking-up" at either end of sections. Not necessary to turn end for end. All ends fit. A Logan feature.

ECONOMY ON WHEELS...

Logan Wheel Conveyors are first choice where light-weight, portable conveyors are required. The free-running, ball-bearing wheels need but a minimum of grade for the power of gravity to set them in motion. Sturdy, dependable. For indoor or outdoor use. Send for literature.

WHEEL Logan Conveyors
LOGAN CO., INC., 276 CABEL ST., LOUISVILLE 6, KY.

If you write maker identify as IEN - 13319

Jrl. Ad TD2-625(1a)

Brand New Tempering Ideas!

● As you're reading this ad our entirely new 20 page catalog should be just off press. It tells graphically some of the remarkable operating results being obtained in hundreds of plants by users of Homo furnaces.

You'll find photos and descriptions of typical installations, cut-away views of the furnaces, description of the control instruments, and complete specifications for various sizes of furnaces, work baskets and trays.

Just write us at 4905 Stenton Ave., Philadelphia 44, Penna. and ask for Catalog TD2-625(1).

LEEDS & NORTHRUP
instruments *automatic controls • furnaces*

If you write maker identify as IEN - 13320

WANT A BETTER CHAIN?

FOR DRIVES
FOR CONVEYORS

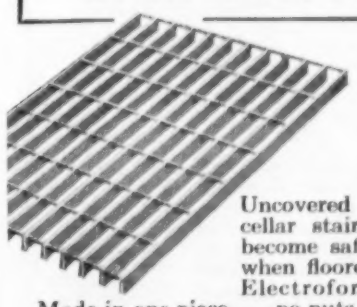
This new booklet presents the complete story of the new Rex R, RX and RR series Chabelco® Drive and Conveyor Chains. It explains how these improved chains can give *you* more for your chain dollar. Send for your copy of Bulletin 53-59 today!

REX® CHAIN BELT COMPANY OF MILWAUKEE

CHAIN BELT COMPANY 53-108
4675 W. Greenfield Ave.
Milwaukee 1, Wis.
Gentlemen:
Please send me Bulletin 53-59.
Name.....
Company.....Dept.....
Address.....
City.....State.....

If you write maker identify as IEN - 13321

Make those **OPEN SPACES** ***SAFE and USABLE*** with this unique, one-piece **OPEN STEEL FLOORING**



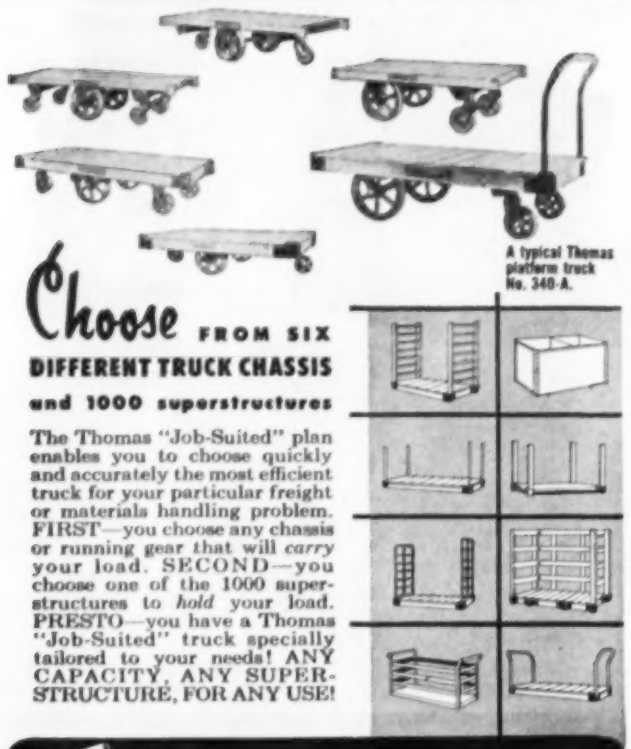
SILENT!
STRONG!
SECURE!

Uncovered pits, light wells, cellar stairways, etc. quickly become safe and usable areas when floored with Blaw-Knox Electroforged Steel Grating. Made in one piece . . . no nuts or bolts to rattle or lose. Provides safe footing even when wet or greasy and lasts indefinitely. Admits maximum light and air. Furnished in any shape, cut to fit. Just send dimensional sketch of area to be covered and we will forward price by return mail.

BLAW-KNOX COMPANY, *Grating Department*
BLAW-KNOX EQUIPMENT DIVISION
2050 Farmers Bank Building, Pittsburgh 22, Pa.
Sterling 1-2700

ELECTROFORGED® STEEL
BLAW-KNOX GRATING

If you write maker identify as IEN - 13322



Choose FROM SIX DIFFERENT TRUCK CHASSIS and 1000 superstructures

The Thomas "Job-Suited" plan enables you to choose quickly and accurately the most efficient truck for your particular freight or materials handling problem. FIRST—you choose any chassis or running gear that will *carry* your load. SECOND—you choose one of the 1000 superstructures to *hold* your load. PRESTO—you have a Thomas "Job-Suited" truck specially tailored to your needs! ANY CAPACITY, ANY SUPERSTRUCTURE, FOR ANY USE!

Write for Free Catalog giving "Job-Suited" particulars.

THOMAS TRUCK & CASTER CO.
441 Mississippi River, Keokuk, Iowa

If you write maker identify as IEN - 13323

Keep Lubrication Fittings Clean

with S.S. WHITE ELASTOPLASTIC CAPS

Here's a tip that will help cut maintenance costs and prolong bearing life . . . use these inexpensive flexible plastic caps on your lubrication fittings. They'll keep the fittings free from the dirt and grit that's often forced into the bearings when the grease gun is applied. The caps can be slipped on and off with ease — and once on, won't shake loose. They're also unaffected by oil, grease or water.

Sizes for Hydraulic, Button Head or 1/8" Dot Type Fittings. Order a supply.

THE S.S. White INDUSTRIAL DIVISION
DENTAL MFG. CO. Dept. NP, 10 East 40th St. NEW YORK 16, N. Y.
WESTERN DISTRICT OFFICE: Times Building, Long Beach, California

If you write maker identify as IEN - 13324

POSITIVE TOOL STEEL IDENTIFICATION

WITH THIS NEW

12-Color Chart!

Now . . . to help you eliminate costly tool steel mix-ups, Carpenter Matched Tool & Die Steel bars are painted FULL LENGTH with distinctive colors! This *practical* marking system, along with this new Wall Chart printed in colors that match the completely-painted bars, enables you to . . .

- QUICKLY IDENTIFY TOOL STEELS!
- REDUCE YOUR OWN MARKING COSTS!
- AVOID COSTLY STOCK MIX-UPS!
- SIMPLIFY INVENTORY-TAKING!

Tool Steel Selector and Identification Wall Chart — 21" x 30"—printed in *12 colors!* To cash-in on this new color-marking system, send for your Wall Chart, *now*. Just mail the coupon.

THE CARPENTER STEEL COMPANY
151 WEST BERN STREET • READING, PA.
Please send me the free Tool Steel Selector and Identification Wall Chart.

NAME ..... TITLE .....
COMPANY .....
ADDRESS .....
CITY ..... ZONE ..... STATE .....
(PLEASE PRINT)

If you write maker identify as IEN - 13325

RETRIEVING . . Welding hose reel for twin oxygen and acetylene hose

Source: UNITED SPECIALTY CORP.
P. O. Box 698, El Dorado, Arkansas

Model OA

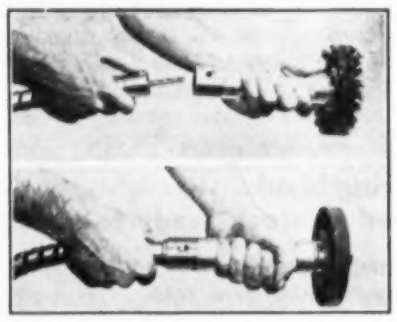
Oxygen is connected to one side of the central spindle in this new Weldreel. Acetylene connects to the opposite side through short lengths of hose equipped with fittings. The reel handles 50 ft. of 5/16-in. twin hose equipped with fittings for connection to a welding torch. The reel mounts on a base measuring 21 by 27 inches. It can be installed to hang from a ceiling, to secure to a wall, to mount on the floor or on a welder's tank cart, all as shown.

The spindle is fitted with replaceable Teflon seals. Worn hose can be removed from the reel and replaced, following instructions supplied for this purpose. The reel takes 50 ft. of 11/16-in. or 40 ft. of 1/4-in. twin welding hose. List is about $115.

If you write maker identify as IEN - 13326

GRINDING . . Quick change handpiece applies on a flexible shaft machine

Source: N. A. STRAND DIVISION
1951 Clipper Road, Baltimore 11, Md.



Press to change

Tools, such as grinding wheels, wire wheels, buffs, sanding discs, can be permanently attached to individual handpieces for quick interchange in this new handpiece design. Assembly is over a shaft extension into a collar fitted with a latch and release button. The latch grips on contact to hold the handpiece in place. The button is depressed to release it for removal. The new unit is standard equipment on Strand machines with No. 6 or smaller handpiece. It also is standard equipment on the company's new high speed attachment.

If you write maker identify as IEN - 13327

Antifoam-A is a new silicone base liquid for spray application in very small amounts to stop foaming in resins, organic mixtures, steam distillations. It is made by Dow Corning Corp., P.O. Box 592-A, Midland, Michigan. Application of 1 to 10 parts per million will control foaming and resulting boil-over. The compound itself is odorless, tasteless and inert. It is packaged in pressurized containers employing Freon fluorinated hydrocarbon supplied as the pressurizing medium by Du Pont.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13328

BUILD YOUR OWN OVERHEAD CONVEYOR!

This detailed, illustrated FREE 28-page book tells how!

You, too, can build your own light-duty, power-driven, overhead monorail conveyor with Junior Monoveyor. This 28-page booklet (Bulletin JM2) tells you in detail how to make your layout, select the parts you will need, and install them. All elements are fully illustrated, all sizes and capacities given.

WRITE FOR YOUR COPY TODAY!

MECHANICAL HANDLING SYSTEMS INC.
4605 Nancy Ave., Detroit 12, Michigan
Offices in Principal Cities
In Canada: Canadian Mechanical Handling Systems Ltd., Toronto

If you write maker identify as IEN - 13329

LEVIN ® Jewelers type lathes for fine instrument work and second operations. Collets as small as .004". Send for catalog. Louis Levin & Son, Inc., 782 E. Pico Blvd., Los Angeles 21.

If you write maker identify as IEN - 13330

STONEHOUSE SIGNS FOR ACCIDENT PREVENTION

SAFETY IS NO ACCIDENT

Now, more than ever, the safeguarding of industrial workers is vital to maximum production. Every accident slows up operations.

Stonehouse Accident Prevention Signs cover every conceivable hazard. Hundreds of stock-worded signs are ready for prompt shipment. • Special wordings also produced to your specifications.

Our complete Catalog No. 9, in full color, is free on request.

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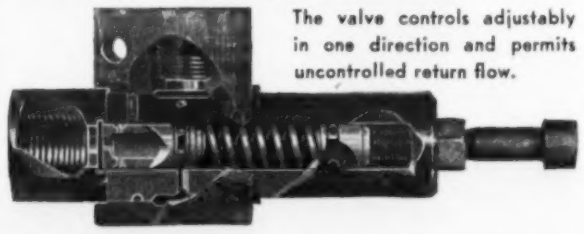
Denver 4 Colorado
"Signs Since 1863"

ACCIDENT PREVENTION SIGNS IN STANDARD COLORS AND DESIGNS

If you write maker identify as IEN - 13331

An adjustable FLOW REGULATOR

This newly perfected adjustable Flow Regulator holds at a constant rate even though the pressure fluctuates.



The valve controls adjustably in one direction and permits uncontrolled return flow.

The spring back piston in the housing is mounted in front of the adjustable screw. It carries a calibrated orifice; operates axially on change in inlet pressure so as to increase the throttling action.

Four sizes, 1/4, 3/8, 1/2, and 3/4 inch. Overall length, 4 1/2 to 7 1/2 inches. Adjustable over a 50% flow range. Maximum pressure is 3000 pounds.

Write for illustrated circular C

WATERMAN ENGINEERING Company
725 CUSTER AVENUE
EVANSTON, ILLINOIS

If you write maker identify as IEN - 13332

In to stay when you use P-K

Hardened **Screwnails**

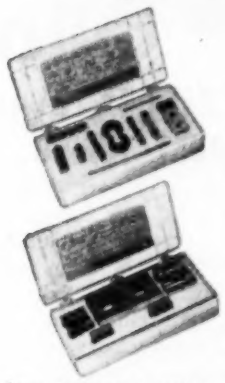
for fastening
SHEET METAL to WOOD
WOOD to WOOD
or other fastenings where you need
NAIL DRIVING SPEED with SCREW HOLDING POWER

Ask your P-K Distributor for samples and the SCREWNAIL folder, or write: Parker-Kalon Division, General American Transportation Corporation, 200 Varick St., New York 14.

PARKER-KALON®
FASTENERS

If you write maker identify as IEN - 13333

Plant efficiency, safety improved with CARBOLOY® permanent magnets



Shop Packages 1 and 2 described below.

USERS REPORT ON "YOU-TRY-IT" KITS

Shop Supt. says magnets " . . . *prove very successful for holding parts during stroke of press*" in piercing die operation.

Welding Plant owner finds magnets " . . . *handy to position wire frame assembly while spotting.*"

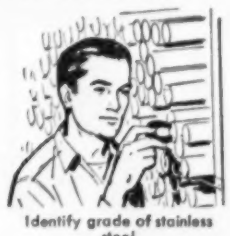
Plant Engineer, typical of the hundreds of shop men trying magnet Shop Packages in their own plants, says, "*We have just begun to realize the possibilities of this product.*"

THESE are but 3 of hundreds of comments from shop men who have obtained "You-Try-It" Shop Packages of Carboloy permanent magnets.

They find the powerful, lasting energy of the magnets ideal for holding, lifting and separating jobs . . . for speeding setups, production . . . for saving time, money plantwide.

Order Carboloy magnet "You-Try-It" Shop Packages yourself. Perhaps they will spark you, too, to savings in your plant. See coupon.

Hold small parts for light grinding.



Identify grade of stainless steel.

Hold shield during paint spraying.

Get the "YOU-TRY-IT" Magnet Assortment

Shop Package No. 1 – Contains 48 Carboloy permanent magnets: 8 styles – 3 pairs each. Magnetic pull up to 2 lbs. per magnet. Price $10.00 (subject to applicable sales and use taxes). Order today.

Shop Package No. 2 – Contains 18 magnets: 4 styles – 2 pairs each; and 1 style – 1 pair. Magnetic pull from 3 lbs. to 12 lbs. per magnet. Price $15.00 (subject to applicable sales and use taxes). Order today.

"Carboloy" is the trademark for the products of the Carboloy Department of General Electric Company

MAIL THIS COUPON TODAY

CARBOLOY
DEPARTMENT OF GENERAL ELECTRIC COMPANY
11177 E. 8 Mile St., Detroit 32, Mich.

☐ Send me free Magnet Idea Literature Kit.
☐ Send me____ Shop Package No. 1 at $10.00 each, postpaid.
☐ Send me____ Shop Package No. 2 at $15.00 each, postpaid.
☐ Enclosed is check or money order for $____. ☐ Send C.O.D.

Name_____ Position_____
Company_____
Address_____
City_____ Zone_____ State_____

If you write maker identify as IEN - 13335

TESTING . . Electronic instrument to analyze vibration at six locations

Source: INTERNATIONAL RESEARCH & DEVELOPMENT CORP. 166-70 Hosack St., Columbus 7, Ohio

Model 553 Folder

Model 553 designates a new vibration analyzer to which are connected as many as six inductive pickups. The pickups are secured at the points of stress on a machine in which vibration is to be analyzed. A six-position input selector switch permits selective readings from one pickup at a time.

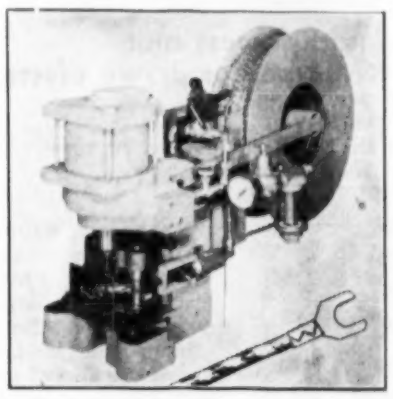
Amplitude of vibration, peak-to-peak displacement, is read directly from a meter in four selective ranges between 0.1 and 0.0001 in. on full scale. Frequency of vibration is read directly, on a meter in three ranges between 10,000 and 40,000 cpm. full scale.

An oscilloscope, with gain and sweep controls, permits visual observation and photographic recording of wave patterns. A filter selector switch permits selection or rejection of various vibration frequencies to analyze complex vibration problems. The instrument operates on 110-volt ac. The permanently calibrated pickups have a frequency range from 500 to 40,000 cpm. and an amplitude range from 0.1 to 0.000002 inch. The assembly weighs 44 lb. and measures 9½ by 17 by 13 inches. List price is $2,445.

If you write maker identify as IEN - 13336

ASSEMBLING . . Pneumatic press secures terminals on electric wire

Source: PATTON-MACGUYER COMPANY 15-19 Virginia Ave., Providence 5, R. I.



P-M Cold Crimper

Preformed terminals, made in a continuous strip and wound on a supply wheel, feed from the rear into this new assembly press. Electric wire, with the insulation stripped from its end, is positioned through an opening in a plastic guard at the front of the machine and an air valve connecting to a shop supply is tripped by depressing a foot pedal.

The power cylinder, connecting to the die set in the machine, moves the punch down to crimp and cut off a terminal and to position the next terminal as part of its complete cycle. The die set is removable for quick tool change. Extra die sets can be kept on hand to prevent lost time at the machine.

The company supplies both the machine and the formed terminal strips, the latter on non-returnable rolls ready to set up on the spindle support at the rear of the assembly.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13337

only **Norgren MICRO-FOG** gives you all these lubrication features for

LONGER BEARING LIFE

Complete Visibility and Control of Oil Feed . . . no guess work.

Oil Feed Controlled By Air . . . gives very uniform rate of oil feed.

Constant Oil Level . . . rate of oil feed not affected by oil supply.

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If you write maker identify as IEN - 13338

Small precision metal parts... Torrington makes them better, and for less!

FREE CATALOG — shows the great variety of small parts we can produce inexpensively and promptly. Send for copy today!

If your product uses small precision metal parts . . . pivots, pins, dowels, rollers, mandrels, needles, punches, etc. . . . send us your blueprints for a prompt quotation.

As a leading contract fabricator, TORRINGTON is equipped with the special machinery to produce in any quantity for quick delivery at low prices.

THE TORRINGTON COMPANY
Specialties Division
360 Field Street • Torrington, Conn.

Makers of
TORRINGTON NEEDLE BEARINGS

If you write maker identify as IEN - 13339

Learn how Farval can protect your machine and save you money

FREE—Just off press! Bulletin 26 has 20 pages of photographs, drawings, diagrams and text, showing the complete line of Farval systems. Send for it today.

● This new 20-page databook brings you up-to-date on centralized lubrication. Color drawings show step-by-step operation of the unique Farval Dualine valve. All types of systems illustrated—manual, heavy-duty automatic, light-duty automatic DC 20 and Farval Spray Valve. Also included are reports of user experience that indicate savings in oiling labor, lubricant, bearing expense and production time that you can expect on your *Farvalized* machines.

THE FARVAL CORPORATION
3258 East 80th Street • Cleveland 4, Ohio
Affiliate of The Cleveland Worm & Gear Company, Industrial Worm Gearing

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If you write maker identify as IEN - 13340

NEED COPIES?
—produced in your own office

MODERN MIMEOGRAPHING — New equipment and supplies for the fast production of copies on a wide variety of paper and card stocks. A. B. Dick mimeograph products are for use with all makes of suitable stencil duplicating products.

MODERN SPIRIT DUPLICATING—Completely new A. B. Dick spirit duplicator produces 120 to 150 sharp copies a minute in 1 to 5 vivid colors from one master in one operation. Automatic feed—post card to legal size—16 lb. to 70 lb. stock.

MODERN OFFSET—A. B. Dick lithograph direct image plates and masters provide for (1) longer runs with sharp definition—(2) easier corrections — (3) more successful filing — (4) marked superiority in resistance to fingerprints.

(MODERN FOLDING—small, low-cost A. B. Dick electric folding machine saves time and money.)

Write Dept. IEN-53 for full information—or call the A. B. Dick Distributor listed under Duplicating Products in the classified section of your phone book.

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THE FIRST NAME IN DUPLICATING
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If you write maker identify as IEN - 13341

Using a patented, compound leverage design, the No. 234 Multi-Purpose Plier increases your grip 10 times at the jaws. It securely holds square, round or tapered objects. A sensational work-saver. Buy one today from your PROTO dealer. Send 10¢ for 68-page catalog to

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Choose PROTO for your other plier needs. The complete line has the right plier for almost every job.

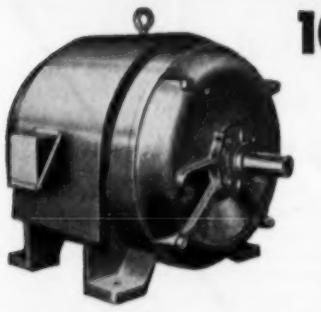
5384

PROTO TOOLS

Eastern Factory—Jamestown, N.Y.
Canadian Factory—London, Ont.

If you write maker identify as IEN - 13342

Wagner Industrial Motors



100 to 400 hp

Designed to meet modern industrial requirements

The Wagner line of general purpose polyphase squirrel-cage motors includes a "family" of open protected-type ratings from 100 through 400 horsepower. These motors are protected by a rugged steel frame with ventilating openings at the bottom only, and by endplates of drip-proof design.

Two outstanding features—winding strength and adequate ventilation—mean that these Wagner motors are built to stand the shocks of starting heavy loads repeatedly, and to operate continuously, under normal conditions, without exceeding their rated 40° C temperature rise.

Write for complete information.

M53-21

Wagner Electric Corporation EST. 1891

6414 PLYMOUTH AVENUE
ST. LOUIS 14, MO.

ELECTRICAL EQUIPMENT AND AUTOMOTIVE BRAKE PRODUCTS

If you write maker identify as IEN - 13343

Buell 'LR' Collector gets 99% of all 100-mesh and larger cinder discharge. Top efficiency for boilers from 100 to 2000 BHP.

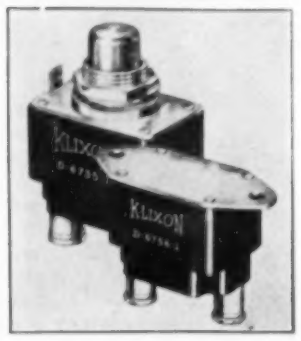
Draft loss so low you can use 'LR' on the smallest natural draft boilers.

Get all the facts—write for 'LR' Bulletin. Buell Engineering Company, Dept. 22-L, 70 Pine Street, New York 5, New York.

If you write maker identify as IEN - 13344

CIRCUIT BREAKER . . Miniature for electric instrument protection

Source: SPENCER THERMOSTAT DIVISION
110-14 Forest St., Attleboro, Mass.



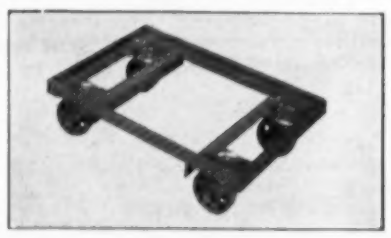
Sealed construction

Type D6755-1 and D6756-1 are new miniature circuit breakers for use in electric instrument circuits, particularly in aircraft. Three ratings are ½, ¾ and 1 ampere. The first is manually reset non-indicating design. The second is automatic reset. The actuating element is the snap acting Spencer disc. It provides positive make and break. Both breakers will withstand shock to 25 G and vibration frequency of 10 to 55 cps. with a total excursion of 0.06 inch. Housing dimensions overall are ¾ by 1⅛ by ¾ inch.

If you write maker identify as IEN - 13345

TRUCK . . Open frame dolly rates 1200 lb. on 4 in. steel casters

Source: ANGLE STEEL INC.
452 Thomas St., Plainwell, Mich.



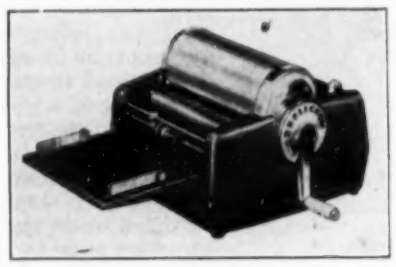
Dolly Truck

Angle steel frame in welded assembly is fitted with four 4-in. steel swivel casters. The unit stands 7½ in. in height and will carry a 1,200-lb. load. Finish is in olive green. Overall dimensions are 24 by 16 inches.

If you write maker identify as IEN - 13346

PRINTING . . Liquid process unit duplicates typed or drawn master

Source: DUPLICOPY COMPANY
224 W. Illinois St., Dept. IEN, Chicago 10, Ill.



One to five colors

Patented wiper blade in this new Magic Fluid Flow machine assures even distribution of fluid over the roller so the machine will produce sharp clean copies. The master is prepared by typing, writing or drawing. Copies can be made at the rate of 150 per min. in as many as five colors at one time. The machine will take work from post card size to 8½ by 14 inches. Two designs employ automatic and manual feed. One master will produce a minimum of 300 copies.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13347

Westinghouse COROX® and SPEEDTEMP forced convection air heaters are especially designed for space or area heating. They provide positive air circulation to maintain a comfortable room temperature without cold spots. For out-of-the-way, hard-to-heat places, here is the fast, efficient way to provide low-cost heat. Investigate these versatile heaters today.

FREE 26-Page Catalog—Tells you how to select the proper heater that will best fill your needs. Excellent information on heating insulated and non-insulated rooms. A definite help in your heater selection. Mark inquiry card for Catalog 28-020, or write Westinghouse Electric Corp., Industrial Heating Dept., Meadville, Penna.

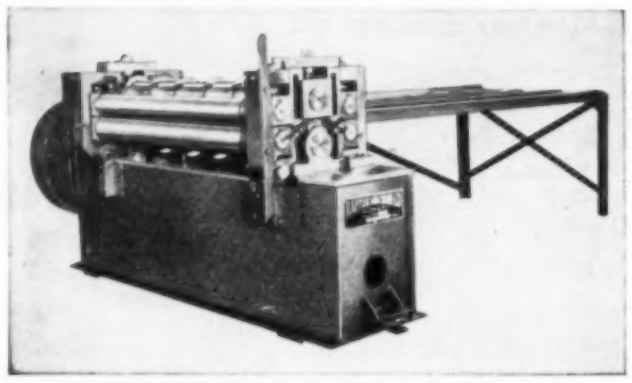
J-10414

YOU CAN BE SURE... IF IT'S Westinghouse

If you write maker identify as IEN - 13348

RAFTER GANG SLITTER

For Lasting Accuracy



With or without feed rolls for the slitting of varied widths and gauges of metal. Machined and accurately ground cutter shafts made of high-grade carbon steel. Machine cut gears. Generous size bearings. Vertical adjustment of upper spindles allows regrinding of double edge type cutters. By removing two bolts, the end housing is drawn from cutter shafts permitting quick change of cutters. Spacer collars machined and marked for particular job, easily and simply removed for change over of various slitting widths. All features represent accuracy, speed and economy.

RAFTER MACHINE COMPANY, INC.
SINCE 1917
249 Stephens Street **Belleville 9, N. J.**
COLD ROLL FORMING MACHINES
& PRESS BRAKE FORMING DIES

If you write maker identify as IEN - 13349

CMH hose collecting dust particles on a buffer job.

FLEXIBLE METAL EXHAUST TUBING...

. . . on air blowers, in suction lines or dust collecting systems. Absorbs vibration . . . corrects for misalignment . . . can be moved easily. CMH Flexible Metal Exhaust Tubing is made of galvanized steel, brass, aluminum, etc. Standard sizes from ½" to 12" I.D. Couplings to suit needs. Write for complete information.

CHICAGO METAL HOSE
DIV. FLEXONICS CORPORATION
1333 S. Third Avenue, Maywood, Illinois
Manufacturers of flexible metal hose and conduit, expansion joints, metallic bellows and assemblies of these components.
***In Canada:* Flexonics Corporation of Canada, Ltd., Brampton, Ontario**

If you write maker identify as IEN - 13350

loosens frozen parts

11,500 industrial users depend upon this amazing new chemical tool when some frozen parts tie up valuable machinery or threaten production. They say . . .

"Kroil will loosen almost anything from an embalmer's needle to a bulldozer."

"We have excellent results loosening stuck slides on musical instruments."

"On a 25-year-old Bessemer gas engine, two bolts twisted off before . . . after using Kroil, they all came out easily."

"Before trying Kroil on heat treat trolleys we broke off every nut . . . since then, we have not lost one."

You too can get these results. Try KROIL on money-back basis. Gallon, $3.85; with Kroiler squirt gun, $4.95, f. o. b. factory.

Ask for GENIUS AT WORK—a free publication full of ideas for maintenance men.

KANO LABS. 1071 S. THOMPSON LANE NASHVILLE 11, TENN.

If you write maker identify as IEN - 13351

PRATER ROTARY AIRLOCK FEEDER

FEEDS powdered and granular products into conveying line — quickly and accurately!
STOPS air leakage at the discharge of dust collectors or other pneumatic equipment!
PRE-DETERMINES rate of feeding material into mixers, blenders, hoppers, etc.
RECOMMENDED in the processing of: Ball Clay, China Clay, Diamaceous Earth, Kaolin, Grains and Feeds, Graphite, Limestone, Whey Powder, Calcium Carbonate, Sulphur, Fullers Earth, Ochre, Volcanic Ash, Bronze Powder, Bauxite, Carbon Black Salt, Barium Carbonate, Marl, Sugar, Cocoa, Gypsum, Silica, Manganese Sulphate, Phenolic Molding Compound.

Send for new illustrated bulletin

PRATER PRATER PULVERIZER COMPANY
1536 So. 55th Court • Chicago 50, Ill.

If you write maker identify as IEN - 13352

YOU GET 10 BIG ADVANTAGES WITH CHROMALOX *Electric* RADIANT HEATERS

1. IT'S COLOR BLIND FAR INFRARED
2. UNIFORM HEAT—NO HOT SPOTS
3. BUILT TO TAKE A BEATING
4. HIGH INTENSITY RADIATION
5. QUICK WARM UP
6. UNIQUE 0-100% ADJUSTABLE HEAT OUTPUT
7. ADDED SAFETY WITH VOLATILES
8. FOCUSSED RADIATION
9. EASY OVEN BUILDING
10. SPACE SAVING

Want to know more about this
FLEXIBLE HEAT SOURCE?
Send for Bulletin CS-604. It shows you why and how Chromalox Radiant Heaters do a better job of baking, drying, curing, etc.

Industrial Radiant Heating Division
EDWIN L. WIEGAND CO., 7505 THOMAS BOULEVARD, PITTSBURGH 8, PA.
See our Electric Heat Advt., Page 5
CHROMALOX
ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN - 13353

Who's afraid of friction?

Ever wonder why Tide Water formulates over 300 industrial lubricants? The answer can save you many hundreds of lost lubrication dollars! Because the problems of friction are varied . . . we believe that each job requires a *specialized* lubricant, an oil or grease specifically designed for peak efficiency . . . at lowest cost. And we're constantly on the lookout for formulas that do an even better job. That's why we say: When it comes to selecting the proper lubricant—be specific. Ask your local Tide Water representative for the *one* Tycol lubricant that's *engineered to do the job!*

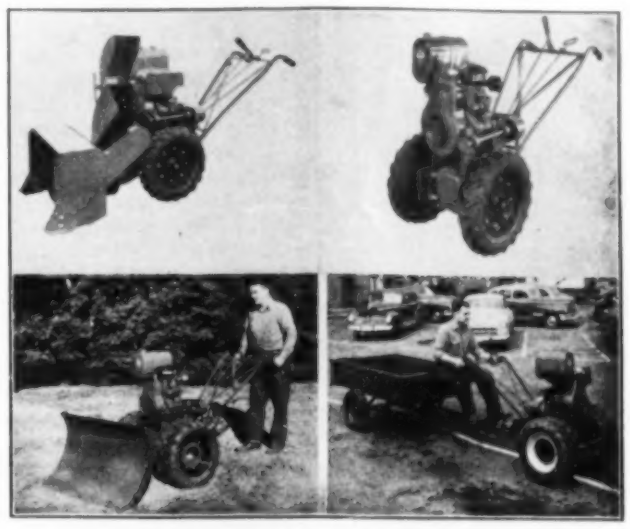
TYCOL INDUSTRIAL LUBRICANTS
TIDE WATER ASSOCIATED OIL COMPANY
17 BATTERY PLACE · NEW YORK 4, N. Y.

Refiners and Marketers of Veedol . . . The World's Most Famous Motor Oil

If you write maker identify as IEN - 13354

SNOW PLOW . . Engine driven, gathers and throws the snow to one side

Source: MAXIM SILENCER CO.
83-87 Homestead Ave., Hartford 1, Conn.



For year-round application

New design is announced by the company for its Model-728 combination snow plow and utility tractor. It is shown rigged as a rotary plow to the upper left in the illustration. In this arrangement it will cut a path 28 in. in width in dry snow, to 25 in. in maximum depth. It is equipped with three forward speeds and one in reverse. Maximum rotor speed is 375 fpm. in high travel speed to cover about 875 sq. ft. of ground surface per minute.

The delivery chute can be set to throw the snow close to the side of a cleared path or to a distance as great as 40 ft. away. Overall dimensions are 88 by 28 by 49 inches. A loader chute is available to deliver into a truck. This unit measures 105 in. in height. Wings can be added to increase the cut width to 36 inches. Drive is by a 7½-hp. Wisconsin engine operating at 3,000 rpm.

The tractor assembly, shown to the right in the illustration, can be separated from the plow and other attachments employed such as the bulldozer blade and the dump cart, also illustrated. In addition, there is a lawn roller and a 37-in. rotary mower so the equipment can be used during the year.

If you write maker identify as IEN - 13355

RECTIFYING . . Selenium unit for adjustable dc. output to 12 volts

Source: RAPID ELECTRIC CO.
2828 Middletown Road, New York 61, N. Y.

Catalog on request

Direct current is provided by this new selenium rectifier, for electroplating and electrocleaning, in a range maximum at 12 volts. The assembly employs a single control in place of the three individual phase controls in previous designs. It permits voltage and current changes in fine increments without interruption. Forced draft cooling and overload protection are standard in the design.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13356

Quality control is a term that can mean everything or nothing. At AMERICAN WELDING it is referred to as *quality self control.* Every man and woman at AMERICAN WELDING feels an individual responsibility to make his work conform to the standards represented in the A.W.Q. symbol. It's the *personal* symbol of the 800 experts that are joined in a common pledge to give you the best in welding.

Why not call in an AMERICAN WELDING representative today to survey your welding requirements. Branch offices in major cities.

THE AMERICAN WELDING & MANUFACTURING CO.
160 DIETZ ROAD • WARREN, OHIO

If you write maker identify as IEN - 13357

NEED... ELECTRICALLY HEATED PIPE?

STA-WARM heated pipe circulates potting compound, pitches, asphalts, etc., any distance from melting tank and heated pump to point in use . . . without allowing a drop in temperature. Heated pipe helps hot material to flow more freely.

Valves and heated hose may be installed along the pipe line at points of application.

Temperature controlled by thermostats. 110 or 220 V. a-c.

Write today for specifications bulletin.

ALSO, heated gate valves and fittings in sizes from 1" up. Flexible heated hose.

Sta-Warm ELECTRIC CO.
560 N. CHESTNUT ST., RAVENNA, OHIO

If you write maker identify as IEN - 13358

New POTENTIOMETER provides control for machine tools

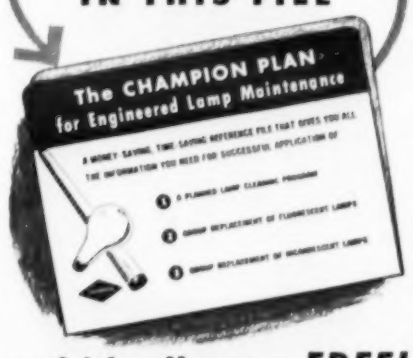
This compact lightweight potentiometer provides accurate electronic control for cutting tool, winder, processing machine drives, and similar applications.

The precision metal alloy contact fully traverses the special resistance element with ½" plunger movement. Oil-tight enclosure, permanent calibration, 10,000 ohms resistance value on standard, up to 25,000 ohms on custom-made potentiometers. Write for Bulletin 68, Ward Leonard Electric Company, 33 South St., Mount Vernon, N. Y.

WARD LEONARD ELECTRIC CO.
Result-Engineered Controls Since 1892
RESISTORS • RELAYS • MOTOR CONTROLS • CHROMASTER

If you write maker identify as IEN - 13359

IT'S **ALL** IN THIS FILE



and it's all yours FREE!

WHAT is the most profitable cleaning cycle for my lamps?

HOW can I avoid 83% of my lamp burnouts?

WHEN and **WHERE** does group lamp replacement save me money?

WHY can I replace six lamps for what it now costs me to replace one?

JUST CLIP AND MAIL THE COUPON

CHAMPION LAMP WORKS
LYNN, MASSACHUSETTS

Please mail me your Engineered Lamp Maintenance File Folder — D

Name .....

Company ..... *Position* .....

Address .....

If you write maker identify as IEN - 13360

FAST, ACCURATE BENDS with DI-ACRO* Hydra-Power Bender

Simple and complex bends are readily formed and duplicated in many ductile materials with hydraulically operated Di-Acro Benders. The Bender can be delivered completely tooled for bending tubing, moulding, extrusions and other solid materials. Tooling can be made in your own plant if you prefer.

SEND FOR 32-PAGE CATALOG

Gives complete information on Di-Acro Hydra-Power and hand Benders. Also describes hand and power operated Di-Acro Brakes, Notchers, Punch Presses, Rod Parters, Rollers and Shears.

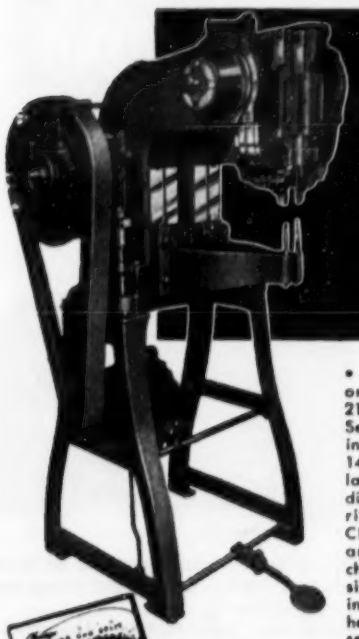
*pronounced Dis-ack-ro

Creators of "Dis-Less Duplicating"

di-acro PRECISION METALWORKING MACHINES

O'NEIL-IRWIN MFG. CO.,
318 8th Avenue • Lake City, Minn.

If you write maker identify as IEN - 13361



LOWER THE BOOM ON COSTS

SET RIVETS FAST

2 at a time with the

Chicago "214"

• With every press on foot pedal Model 214 Chicago Double Rivet Setter automatically feeds, inserts and clinches two rivets. 14-inch throat accommodates large assemblies. Handles 9/64" diameter or smaller steel tubular rivets—lengths to 7/8". Quick Change Rotary Type Hoppers and Raceways permit 5-minute changeover to rivets of different size. Adjustable anvils and riveting centers add to versatility. For help with fastening problem . . . send sample assembly (or a blue print) for free fastening analysis.

FREE CATALOG *contains valuable engineering information and rivet specifications plus illustrated descriptions of 26 Chicago Automatic Rivet Setters.*

Chicago Rivet & MACHINE CO.
9602 West Jackson Boulevard, Bellwood (Chicago Suburb) Illinois
Branch Factory: Tyrone, Pa.

If you write maker identify as IEN - 13362

this book shows you how to

Reduce machine noise and vibration 60-85%.

Avoid floor drilling by mounting machines the modern way, without bolts or lag screws.

Reduce maintenance costs by eliminating transmitted vibration which damages machines, floors and buildings.

Save time and money when installing new machinery or repositioning present machinery.

Write today for your free copy of "Why It Pays To Anchor Your Machines With UNISORB."

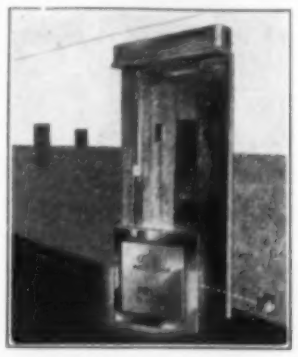
THE FELTERS COMPANY
208 South Street, Boston 11, Massachusetts

UNISORB® MOUNTINGS are used with our special adhesive. UNISORB is also available precoated with adhesive, for use with machines that do not require shimming.

If you write maker identify as IEN - 13363

DOOR OPERATOR . . Pneumatic with explosion proof control switch

Source: STANLEY WORKS
193-97 Lake St., New Britain, Conn.



Doors to order

New switch, enclosed in a cast iron housing that meets NEMA Type-VII, Class-1, Groups C and D requirements for explosive gas atmospheres, is available for installation with the company's pneumatically operated Magic Door for hazardous locations. The new assembly permits installation of the door in locations where explosive conditions may exist in the atmosphere.

The switch mounts in a wall adjacent to the door and is pressed to close the solenoid operating valve to the door mechanism. The door swings or folds open, depending upon its particular design. It remains open for a sufficient time to permit passage through the doorway. Then it closes.

If you write maker identify as IEN - 13364

MARKING . . Decalcomania for aircraft fuel and hydraulic lines

Source: MEYERCORD COMPANY
5321-25 W. Lake St., Chicago 44, Ill.

Technical data upon request

Transfer E-51, for use on fuel lines where heat is not a factor, and Transfer HR for fuel and hydraulic lines, at temperatures to about 900 deg. F., have been added to the company's line of decalcomanias particularly to identify the fuel and hydraulic lines on the two sides of bulk heads in aircraft construction. Transfer HR not only will withstand the high temperature, but also is impervious to attack by aromatic fuels and Hydrolube or Skydrol hydraulic liquids.

If you write maker identify as IEN - 13365

FASTENING . . Enclosed lock nut rides corroded threads, spins free

Source: NUTT-SHEL COMPANY
809-13 Airway, Glendale 1, Calif.

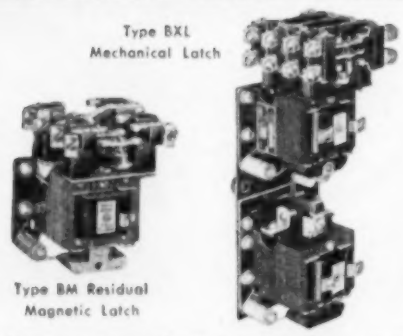
Formed flange

Series 1700 F, for temperatures to 1,600 deg. F. and Series 1700 G for temperatures to 1,200 deg. F., are included in a new design of nut enclosed in a flanged housing. The nut itself is split and will ride over corroded threads to prevent galling and seizure in high temperature applications. It spins free on the threads until it reaches locking position. Sizes range from 10-32 NF-3 to 3/8-24 NF-3. Both series meet specifications MIL-S-5059 and AN-S-126.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13366

HUM-FREE A-C RELAYS



Here are two unique, hum-free relays that require no coil current to keep them closed. The Type BM Relay is a compact unit which is closed by momentarily energizing the solenoid coil. The relay is held firmly closed by residual magnetism until opened by a momentary demagnetizing current. The Type BXL Relay is a standard Bulletin 700 Magnetic Relay with a mechanical latch. Write for information.

Allen-Bradley Company
1312 S. Second St., Milwaukee 4, Wis.

ALLEN-BRADLEY QUALITY
RELAYS & CONTACTORS

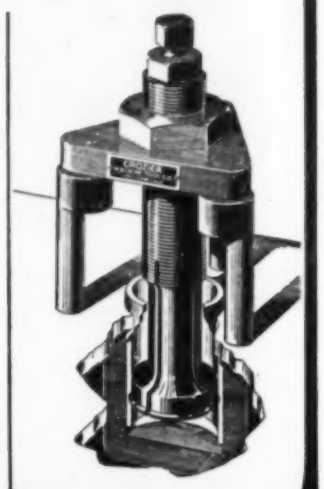
If you write maker identify as IEN - 13367

NEW EXTRACTOR

removes bushings from blind holes

. . . cuts time 75 per cent

The entirely new method of extracting bushings, bearings, sleeves, liners, etc. Eliminates necessity for machining, minimizes the hazard of injury to casings or excessive dismantling of equipment, handles holes from ½ to 2"—over 5 tons have been extracted with unit. Eliminates as much as 75 per cent of labor and time, slashes inventory.



For complete information write Department IEN-12

CROZIER *Machine Tool Co.*
684 NO. PRAIRIE AVENUE, HAWTHORNE, CALIFORNIA

If you write maker identify as IEN - 13368

LIKE AN

ATOM-IC EXPLOSION

Just 1/32" (pinhole size) faucet leak

MUSHROOMS into ATOMIC WASTE

of approximately 95,000 gallons of water yearly—costing:

$24.14

@ $1.90 per M cubic feet

If a hot water faucet, then actual FUEL WASTED heating 95,000 gals. costs approximately:
$55.91 if coal (9879 lbs.)
$91.08 if oil (792 gals.)
$84.41 if gas (84,411 cu. ft.)

Above figures authenticated by Hackensack Water Co. and American Gas Association.

STOP this needless WASTE during today's MATERIAL and MANPOWER shortages with "SEXAUER" "Easy-Tites" that outwear ordinary faucet washers 6-to-1, thus SAVING labor on 5 REPEAT repairs, PLUS water and fuel, while prolonging the life of SCARCE fixtures.

PATD.

"EASY-TITE" Faucet washers

. . . a modern laboratory triumph, are compounded from du PONT NEOPRENE (tested up to 800° F.) instead of rubber—to withstand DESTRUCTIVE HEAT common in present-day superheating water systems—that formerly broke down washer's structure.

Built like a tire with fabric re-inforcement

they resist the grinding, closing squeeze that SPLIT and MUSH ordinary washers out of shape . . . causing LEAKS.

Through combining NEOPRENE and FABRIC RE-INFORCEMENT they OUTWEAR ordinary washers 6-to-1 on hot or cold FAUCETS—thus you slash water, fuel and labor costs.

THE NEW 'SEXAUER' CATALOG,

Edition G, just out pictures over 2500 TRIPLE WEAR plumbing REPAIR parts and Pat'd. Precision Tools. It's today's accepted buying guide for discriminating purchasing and maintenance personnel among thousands of top PLANTS, INSTITUTIONS and GOVERNMENT AGENCIES that rely on SEXAUER repair materials. *Send for your copy today!*

Then too, there's a SEXAUER TECHNICIAN within quick call from coast-to-coast, who offers a special SURVEY service that sets up a schedule of the exact replacement parts required for your particular plumbing fixture regardless of make or age and *without obligation.*

A postcard will bring him and your NEW Catalog promptly.

J. A. SEXAUER MFG. CO., INC., Dept. K-123
2503-05 Third Avenue, New York 51.

as advertised in **THE SATURDAY EVENING POST**

SEXAUER
WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

If you write maker identify as IEN - 13370

AMERICAN'S 'KING SIZE' SELECTION HAS ELIMINATED 50% OF OUR SPECIALS!

American DRILL JIG BUSHINGS

SAVE YOU TIME AND MONEY

50% of your specials are now American's standards. The new standard sizes are listed in our new catalog. In addition, all lengths are now standard with American (no added charges). Our KING SIZE selection of standard types and sizes are immediately available to you — no waiting!

SPECIFY AMERICAN.

GET YOUR KING SIZE SELECTION Send for American's NEW FREE CATALOG NOW!

Write for name of nearest Distributor

AMERICAN DRILL BUSHING CO.
5107 PACIFIC BLVD. LOS ANGELES 58, CALIFORNIA

SPECIALIZING ONLY IN DRILL JIG BUSHINGS

If you write maker identify as IEN - 13371

MOLDED RUBBER ELECTRICAL PARTS

DESIGNED BY EXPERTS to solve your problems . . .

PRODUCED ON TIME to meet your schedule!

What's your problem? If it involves molded rubber electrical components for your product, look no further! Because the design and production of such parts is a Riverside specialty . . . and has been for years! Yes, from appliances to ordnance, prominent manufacturers bring us their problems concerning: • Waterproofing • Insulation • Shock and vibration • Resistance to salt spray, sunlight, oxidation, wear, abrasion, etc. • Extremes in temperature . . . and many other challenging problems.

As a result, we have built up a valuable bank of experience in engineering and producing molded rubber parts. The answer to your problem can probably be found in our file of successful "case histories" . . . and if not, our Engineering Department will give you the answer fast! Send parts, prints, or details of your problem for prompt engineering recommendations and a firm quotation.

Riverside Manufacturing AND ELECTRICAL SUPPLY COMPANY

10215 MICHIGAN AVENUE • DEARBORN, MICHIGAN • PHONE Tiffany 6-6800

WIRING HARNESSES AND ASSEMBLIES • CORD SETS • HEATER AND EXTENSION CORDS • ELECTRICAL SWITCHES • RELAYS • MOLDED RUBBER PRODUCTS

If you write maker identify as IEN - 13372

Shut out ALL the light with AMSON BLACKOUT SHADES

Shade lowered

Reef-pleated to keep out side light and eliminate rollers

No pin-points or slivers of light come through this blackout shade! Absence of rollers lets shade hug window frame tightly. It's perfect for schools, church halls, visual training rooms, laboratories, hospitals, office buildings—easily raised and lowered.

Shade raised

10 oz. full weave Army duck
Extremely durable, yet pliable, duck that can be dry-cleaned and washed. It's run-fast and really jet-black.

Can be made flame-resistant
If desired, duck can be treated for permanent flame-resistance.

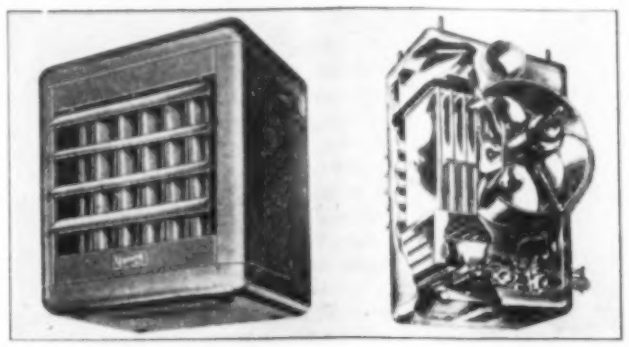
Write or phone for full details today.

A. MAMAUX & SON
120 Blvd. of Allies • Pittsburgh 22, Pa.
Phone COurt 1-3500

If you write maker identify as IEN - 13373

HEATING . . Gas fired space unit in eight sizes to 230,000 btu. per hour

Source: YOUNG RADIATOR CO.
719 Marquette St., Racine, Wis.



Catalog 2753

Model G-50 is a new 50,000 btu. per hr. unit in the company's line of gas fired unit heaters. It has been added particularly for use in areas with low ceilings. It measures 23 in. in height by 19½ in. in width by about 23 in. from front to back. The gas burner fires into an aluminized welded steel tube heat exchanger. Products of combustion move upward through the tubes for escape through a 4-inch flue at the rear near the top.

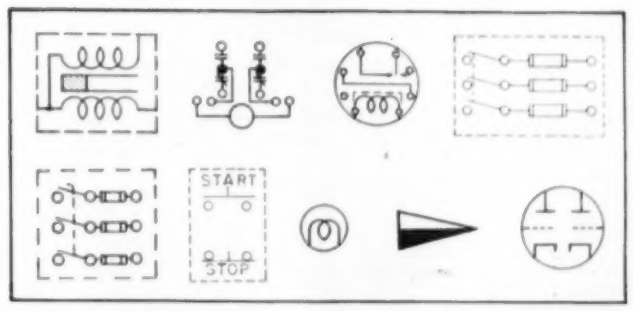
Air is moved between the exchanger tubes by a motor driven four blade aluminum fan rating 725 cfm. at 70-deg. F. entering temperature.

Construction includes an electric solenoid gas valve, a combination shut-off valve and a limit control to prevent overheating the metal parts. Gas input is controlled by an adjustable regulator. Louvers permit distribution of the discharged warm air and a draft diverter prevents back draft from extinguishing the burner.

If you write maker identify as IEN - 13374

DRAFTING . . Symbol stamps to minimize technical drafting work

Source: JOHN GRIFFIN COMPANY
2155-59 James Ave., St. Paul 5, Minn.



295 symbols in Catalog S-171 and Pamphlet B-124

A new stamp pad holding opaque ink and a wide range of new symbols are available in the company's line of transparent plastic symbol stamps previously described IEN-1159-53. The stamps and pad are supplied in kits, the user choosing the specific stamps from a selection shown in a bulletin the company is prepared to supply. List price per kit is $28.50. List price with double size symbols is $38.50. The stamp pad is enclosed in a plastic box to minimize evaporation of the ink.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13375

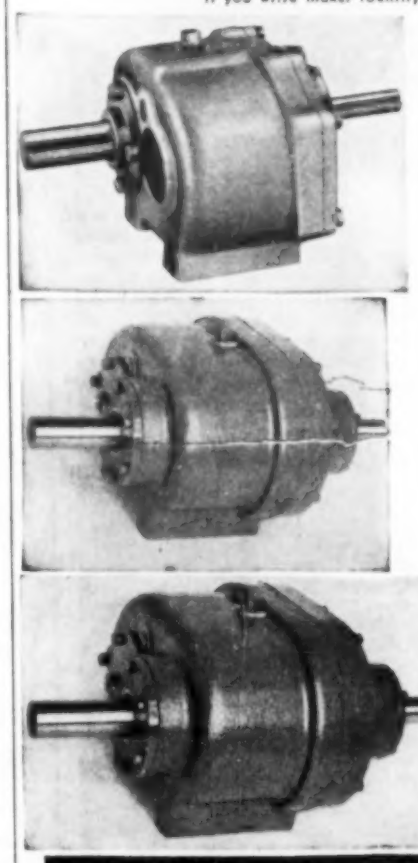
COOL BEAUTY that gives you the AIR...

• hot, muggy days can be whisked away with a flick of a switch on modern room air conditioners, and damage to unit surfaces from dents, scratches or fingerprints can be forgotten forever with handsome Rigid-tex Metal trim on cabinets and control panels. design-strengthened patterns add unusual eye-appeal that helps sell customers on sight.

• write for your copy of detailed Design Imagineering Folder.

RIGIDIZED METALS CORPORATION
66412 Ohio Street Buffalo 3, N. Y.
Warehouses and Sales Representatives in all Principal Cities throughout the U.S. & Canada
U. S. and Foreign Patents

If you write maker identify as IEN - 13376



2 speed automatic transmission

13800 (1-5 H.P.)
5 H.P. capacity with input speed of 900 r.p.m. Maximum Reduction 6.3:1

14100 (5-20 H.P.)
20 H.P. capacity with input speed of 900 r.p.m. Maximum Reduction 6.3:1

15000 (20-50 H.P.)
50 H.P. capacity with input speed of 900 r.p.m. maximum Reduction 6.3:1

Send for catalog and complete information.

up to 100 h. p. For Motorizing Lathes, Milling Machines, Shapers, Turret Lathes, Radial Drills, Mixers, Belt Cutters, Gear Cutters, Die Sinkers, Boring Mills, etc.

WESTERN TRANSMISSIONS
WESTERN MANUFACTURING CO. — 4499 SCHOOLCRAFT — DETROIT, MICHIGAN

If you write maker identify as IEN - 13377

He's up where the work is!

17 feet high... and got there in 25 seconds with his SAFWAY MOTO-LIFT

With a flick of his finger he raised this platform from 7 to 17 feet in less than ½ minute. Now he's up where he can work on ceiling lights, paint or make time-saving repairs on equipment.

HERE'S HOW MOTO-LIFT GETS YOU TO HARD-TO-REACH PLACES *Quickly!*

- Moto-Lift raises 400 lbs. to 17 feet. Yet it is light and easy to use. Strong steel platform and all-steel tubular construction last a lifetime of hard use.
- Moto-Lift raises up to 50 times on one battery charge. No need for an electrical outlet. And battery recharge is a low-cost overnight job.
- Moto-Lift lowers safely in 10 seconds. An ingenious mechanical brake safely locks the telescoping tube if the power fails. Guard rails are safety code approved.
- Moto-Lift telescopes compactly to clear narrow doors. It's light enough to move quickly and easily. Compact for storage in out-of-the-way places.

No doubt about it. Dollar for dollar, Moto-Lift will outlast and outperform any other maintenance tower you can mention. For more facts write today. Or contact one of the 137 Safway dealers near you.

Write for this Free Bulletin

RENTED and SOLD by distributors everywhere

SAFWAY STEEL PRODUCTS INCORPORATED
6228 West State St.
MILWAUKEE 13, WIS.
Manufacturers of Tubular Steel Scaffolding and Equipment

If you write maker identify as IEN - 13379

Rolling Steel Doors

Manually, Mechanically, or Power Operated

Below you see Mahon Power Operated Rolling Steel Doors installed in six truck openings to a motor freight loading dock. Another Mahon Power Operated Rolling Steel Door 17'-0" x 22'-0" is installed in a railroad opening in connection with this same loading dock. Rolling Steel Doors occupy no usable space either inside or outside the opening . . . they create no overhead obstructions—cranes may be employed to handle materials adjacent to the door opening. Quick opening, quick closing, vertical roll-up action saves valuable time . . . all-metal construction provides permanence, greater protection against intrusion and fire, and assures you a lifetime of trouble-free service. Write for Catalog containing complete information including Specifications.

THE R. C. MAHON COMPANY
Detroit 34, Michigan • Representatives in All Principal Cities

MAHON

If you write maker identify as IEN - 13380

WEBB TOWVEYOR*

for FASTER, EASIER and SAFER MATERIALS HANDLING

FASTER—Towveyor chain automatically picks up load when pin attached to truck is dropped into slot. Material is delivered to destination without wasted traveling time.

EASIER—Minimum handling of loads by personnel—trucks engage Towveyor chain or are disengaged at any point with a simple lowering or raising of towing pin.

SAFER—Clear floors with no obstacles for employees to walk or truck over, and there are no overhead chains or supports to present safety hazards.

Cut your handling costs with a "Towveyor" system that will speed up distribution, permit faster filling of orders and easier loading or unloading of freight cars and trucks.

*TOWVEYOR is a registered trademark identifying floor truck conveyors manufactured and installed by the Jervis B. Webb Company

For Further Information, Please Write To:

JERVIS B. WEBB COMPANY
8915 ALPINE AVE.
DETROIT 4 • MICH.
OFFICES IN PRINCIPAL CITIES
CONVEYOR ENGINEERS AND MANUFACTURERS

If you write maker identify as IEN - 13381

You get ALL these features when you buy PET DRILLS!

If you want the best, take an extra look at the PET Superduty Drill above! Here's a continuous-duty drill—built to *work* right and *handle* right.

And, the price is right, too! All features shown are *standard* in PET Superduty Drills—at a *standard drill price!* Complete line of 54 ¼", ⅜" and ½" models gives you wide selection—in pistol or saw-type grip. Use coupon below to get complete facts!

PORTABLE ELECTRIC TOOLS, INC., 320 W. 83rd St., Dept. IE-123, Chicago
In Canada: Portable Electric Tools, Ltd., 452 Birchmount Rd., Toronto

MAIL COUPON FOR FREE BULLETIN

Please send me free PET Superduty Catalog and name of nearest distributor.

Name _____ Title _____
Company _____
Address _____
City _____ State _____

If you write maker identify as IEN - 13382

PROTECTING . . Vinyl coverall, flame proof, water proof, wind proof

Source: CAR-BLAIR LTD.
40 W. 57th St., Dept. IEN, New York 19, N. Y.

Weth-A-Dri

The film employed in this new coverall is a processed vinyl plastic that will not crack in temperatures to 50 deg. F. below zero. The material also resists attack by mildew and will not peel or fade. It is made with slash pockets and a zip front closure to assist in putting it on and removing it. Color is gray.

Four size ranges include small, medium, large and extra large. A matching hat fits any head size. The coverall and the hat can be put away in a small plastic pouch. List price is $46 per dozen for the coverall and $14 per dozen for the hat.

If you write maker identify as IEN - 13383

RUBBER . . Silicone paste to coat glass cloth, organic fabrics

Source: DOW CORNING CORP.
P. O. Box 592-A, Dept. IEN, Midland, Mich.

Technical data upon request

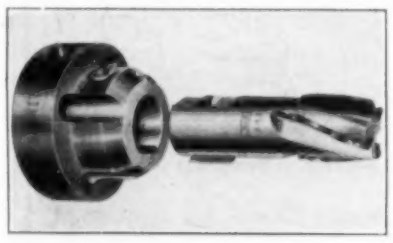
Silastic 132 is a new silicone rubber paste for use as a coating on glass cloth and organic fabrics for surface resistance to abrasion and to a variety of chemicals and oils. The coating remains serviceable in a range between minus 70 and plus 500 deg. F. It is low in water absorption and retains good dielectric properties after flexing and after aging at 480 deg. F.

The paste is dispersible in xylene. It can be diluted to any concentration. Solvent dispersions remain fluid. Test samples stored for long periods gave no indication of being thixotropic.

If you write maker identify as IEN - 13384

MILLING . . Carbide end mill mounts an adapter, has helical teeth

Source: SONNET TOOL & MFG. CO.
576 N. Prairie Ave., Dept. IEN, Hawthorne, Calif.



Helicarb design

Shearing action combines with uniform distribution of the chip load for freedom from chatter and minimum power requirements in this new helical carbide end mill. Application is with a key drive 50 - mm. nose type adapter. Six standard sizes range in diameter from 1½ to 4 in. and are suited for steel and non-ferrous metals. Tests show the cutter capable of removing about 6 cu. in. per min. per hp. on Type ST Duralumin.

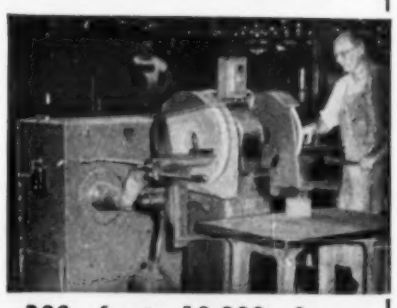
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13385

STOP DUST

INSTANTLY with DUSTKOP

DUSTKOP 1400 cfm.



DUSTKOP 3600 cfm.

300 cfm to 10,000 cfm per unit (22 models)

Standard pre-tested, available from stock. Ask for catalog 605-2. Describe dust problem for recommendation by return mail. No obligation.

AGET-DETROIT CO.
401 Main Street
ANN ARBOR, MICH.

If you write maker identify as IEN - 13386

CESCO *RIGHT... before your Eyes!*

Approved by Bureau of Mines

Organic Vapor Respirator No. 99

• New CESCO twin 85 cc absorbent cartridge respirator has positive acting inhale-exhale valves which prevent rebreathing or exhausting through cartridges. Valves replaced without tools. Cartridges replaced by unscrewing retaining caps. B of M approval No. 2307.

Converts to Dust Respirator No. 96

• Replace vapor cartridges with CESCO filter pads to make No. 96 Dust Respirator. Treated wool-felt filters use entire frontal surface, provide maximum efficiency, little breathing resistance. B of M approval No. 2167.

Dual Purpose Saves Money

• CESCO Respirators have contoured facepiece for snug, comfortable, leak-proof fit. You buy only one respirator and elements as desired.

Send TODAY for CESCO literature

CHICAGO EYE SHIELD COMPANY • 2326 Warren Blvd. • Chicago 12, Ill.

CESCO FOR SAFETY

OFFICES IN: Atlanta, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Columbus, Detroit, East Orange, Houston, Kansas City, Knoxville, Little Rock, Los Angeles, Mexico City, D. F., Milwaukee, Montreal, Philadelphia, Pittsburgh, Salt Lake City, San Francisco, Spokane, St. Louis, St. Paul, Toledo, Tulsa

If you write maker identify as IEN - 13387

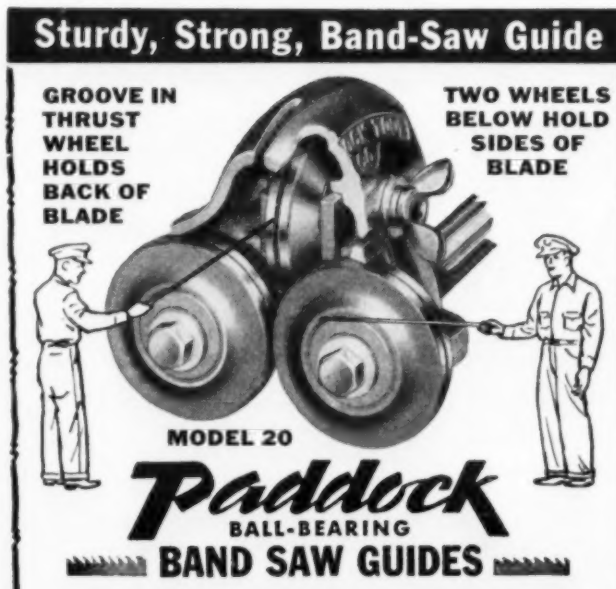
Our near-sighted snake charmer friend should know he can get more out of a wire if it has a well soldered connection. Making the right kind of flux core solder for every application has been Kester's sole business for more than 50 years. For top quality solder, your best buy, today as always, is Kester Solder!

DO YOU HAVE *the free Kester Technical Manual, "SOLDER and Soldering Technique"? Better write for your copy today!*

KESTER

SOLDER COMPANY
4211 Wrightwood Ave. • Chicago 39, Ill.
Newark 5, N. J. • Brantford, Canada

Sturdy, Strong, Band-Saw Guide



MODEL 20

Paddock

BALL-BEARING
BAND SAW GUIDES

EASY TO INSTALL—on machines having 2½" back of blade to guide post. Works above or below saw table. *STURDY, SMOOTH PERFORMANCE*—Interchangeable ball-bearing wheels run with blade to give friction free blade support. Note cut-away section in photo, revealing grooved wheel that supports back of blade. Two side wheels support sides of blade. Designed for ⅛ to 1¼" wide blades. Models for large or small machines. Write for circulars, prices, etc. Give size and make of machines on which guides will be used.

SHIPPED ON APPROVAL WHERE VALUE IS QUESTIONED

PADDOCK TOOL COMPANY
Guide Makers Since 1920
1418 Walnut Street • Kansas City, Mo.

If you write maker identify as IEN - 13388

Here's the easy way to spot railroad cars

It's no back-breaking job to move railroad cars—when a Link-Belt Car Spotter is on the job. One man can take two or three turns of rope on the motor-driven capstan—and spot cars right where they're wanted. Cuts loading and unloading time. Reduces demurrage charges. Two sizes: 5 and 10 hp, developing 5,000 and 10,000 pounds of rope pull, portable or stationary models.

Link-Belt offers a complete line of car spotters . . . also specializes in drum type puller applications.

Cuneo Press, Chicago, has used Link-Belt Car Spotters for 20 years.

LINK-BELT

CAR SPOTTERS

Write today for fact-packed Book 2092

LINK-BELT COMPANY: Plants: Chicago, Indianapolis, Philadelphia, Colmar, Pa., Atlanta, Houston, Minneapolis, San Francisco, Los Angeles, Seattle, Toronto, Springs (South Africa), Sydney (Australia). Sales Offices in Principal Cities. 13,161

If you write maker identify as IEN - 13389

NEW... half the weight of steel!

Buschman

PORTABLE ALUMINUM CONVEYORS

WHEEL OR ROLLER TYPE

Lightweight, new Buschman Portable Aluminum Wheel and Roller Conveyor saves time and energy! Rust-resisting, too, so you can use it indoors *and* out! And it's completely interchangeable with steel conveyor sections.

The Buschman Aluminum Conveyor is so easy to set up . . . so quickly changed . . . it gets maximum use. Typical 10-foot section weighs only 39 lbs., compared to 81-lb. steel section. Interchangeable quick-coupling ends drop into place instantly.

Designed for rugged operating conditions, this conveyor is constructed of special alloys with extra bracing, heavy channels and bars. It's all-aluminum except for the heavy duty, grease packed and dust protected, hardened steel bearings. Complete range of reversible curves in 30, 45, 60 and 90-degree sizes; straight sections from 5 to 10 feet long and 12, 15 and 18 inches wide.

Select a few sections of Buschman Portable Aluminum Wheel or Roller Conveyor. You'll quickly see how it stands up under outdoor or indoor service . . . reduces handling costs.

Representatives in Principal Cities

Write Today for Bulletins 15 and 18.

PRODUCE MORE . . . FOR LESS — Buschman Conveyors

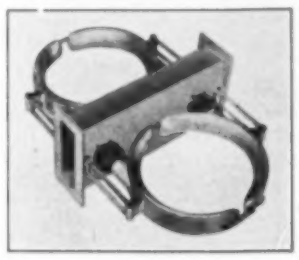
THE E. W. BUSCHMAN CO.
4479 Clifton Avenue
Cincinnati 32, Ohio

CANADIAN LICENSEE: James A. McKechnie, Ltd., Toronto 13, Canada

If you write maker identify as IEN - 13391

DUST COLLECTING . . Tubular filter carries blow rings for self-cleaning

Source: DAY COMPANY
808-12 Third Ave. N. E., Minneapolis 13, Minn.



Bulletin 528

The blow rings in the company's new design of Type-AC reverse jet dust collector, previously described IEN-10827-48, are designed to adjust themselves to the contours of the felt tubes on which they operate. The new arrangement assures correct contact between the rings and the felt tubes with compensation for small variations in the tubes due to changes in temperature, pressure, moisture.

The assembly is available in open design to mount in a duct or in complete enclosed design. It is in two-tube and four-tube unit widths, the former with a total of 4 to 16 tubes and a cloth area of 50.8 to 416 sq. ft., the latter with 16 to 32 tubes and effective net cloth area of 203.5 to 976 square feet. Air handling capacity ranges from 10 to 1 in ratio of cu. ft. per minute to filtering area to a maximum of 20 to 1.

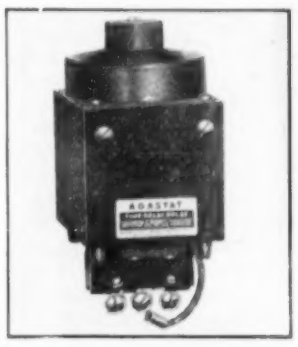
The new rings are made in half sections and each is mounted on the air duct by cast aluminum arms with roller chain links. The air ducts are made of cast aluminum and the assembly of duct and rings is in multiples of 4 to 32. The duct connects to a motor driven blower that supplies air under pressure.

The air fills the rings, passes through slots in contact with the tube wall to move through the tube blowing the dust away from the inside surface. The dust falls to the bottom where it is removed by constant or intermittently operating equipment. The rings move up and down steadily along the tube lengths for continuous cleaning action. Construction is licensed under Hersey patents.

If you write maker identify as IEN - 13392

RELAY . . Pneumatic time delay actuated by momentary switch contact

Source: ELASTIC STOP NUT CORP.
1022 Newark Ave., Elizabeth, N. J.



Delays initial action

Type NEH is a new assembly in the Agastat pneumatic relay line for use in control circuits requiring a time delay actuated by a momentary impulse. The delay interval is controlled by flow of air through an orifice, the air being circulated within the timing chamber to keep it free from dust. Interval control, between 0.1 sec. and 10 min., is set by adjusting a needle valve.

An auxiliary switch, mounted at the bottom of the assembly, has contacts that are held open by an extension of the main solenoid core when the solenoid circuit is open. Closing this circuit closes the auxiliary contacts to keep the main coil energized. The switch contacts operate at the end of the timed interval. The contacts rate 15 amp. on 110-volt 60-cycle ac. Overall dimensions are about 2½ by 2½ by 6 inches. Contact arrangements can be specified single-pole double-throw or double-pole double-throw.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13393

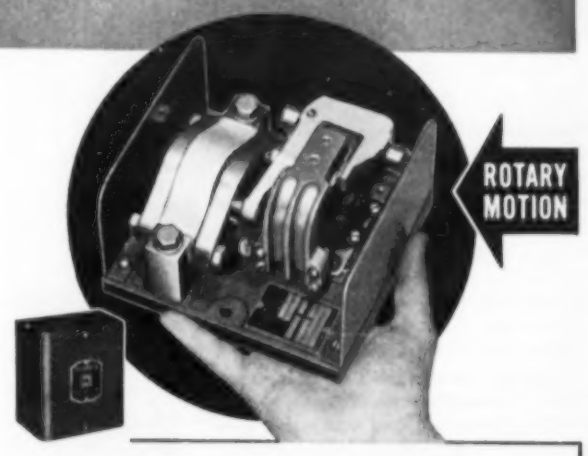
A PAID NEWS ADVERTISEMENT BY MATHEWSON MACHINE WORKS

NEW ADJUSTABLE DRILL JIG eliminates layout; cuts drilling time

Used for drilling holes through round stock and hex stock from ¼" to 2" and cap screws from ¼" to 1¼", the new Mathewson Adjustable Drill Jig eliminates layout and can cut drilling time on small lots to a fraction. And it eliminates the costs of special jigs for larger quantities. Holes for cotter pins, set screws, drive pins for bayonet joints, oil holes in tubular sections, and wiring holes in cap screws, are typical of the operations that can be done more economically with this jig. Hole diameters range from .052" to .531", using your A.S.A. standard slip bushings. The hardened V block has two 60-degree V's for centering round or hexagonal stock, one for ¼" to 21/32" diameter, one for 21/32" to 2" diameter. Adjustable stock for locating work longitudinally for drilling any distance from end, may be used on either side. Adjustable bushing carries hold slip bushings and clamp work securely. Jig highly successful in permitting use of inexperienced drill operators. For circular write to **Mathewson Machine Works,** 26 Hancock Street, Quincy, Mass.

If you write maker identify as IEN - 13394

NEW.. Magnet-Operated Valve



• Fast Operation • Low Pressure Drop • Long Life • Low Power Consumption • Compact • Accessible • Easily Installed.

Write for Bulletin 9043 Type C, Square D Company, 4041 N. Richards Street, Milwaukee 12, Wisconsin

Ask Your Electrical Distributor for Square D Products

SQUARE D COMPANY

If you write maker identify as IEN - 13395

DESIGN IDEAS FOR YOU

in every issue of the "NEOPRENE NOTEBOOK"

New products made of neoprene, Du Pont's versatile chemical rubber.

New engineering developments showing neoprene's wide range of applications.

Performance data proving neoprene's superiority in the field.

DU PONT

Better Things for Better Living ...through Chemistry

MAIL READER-SERVICE CARD FOR YOUR FREE SUBSCRIPTION

NEOPRENE

The rubber made by Du Pont since 1932

If you write maker identify as IEN - 13396

versatile OKOLITE-OKOPRENE cables

. . . UNDERGROUND, IN CONDUIT, AND OVERHEAD

Okolite-Okoprene cables were installed recently in a large paper mill to handle the power and control circuits for a Kaymr Pulp Drying Machine. Leads for the synchronized generators, for motors and circuit breakers, the self-supporting aerial cables from substations to the power house, as well as pushbutton station and lighting system wiring, were all Okolite-Okoprene.

Okolite-Okoprene cables are highly resistant to all attacking elements. They may be used in wet, dry, hot or cold locations, underground or in conduit. Write for Bulletin IE-1053 for full information. The Okonite Company, Passaic, N. J.

1743

OKONITE insulated cables

If you write maker identify as IEN - 13397

Stop torsional strain with Eastman ADAPTER UNIONS

Eastman Design and Engineering Guarantees Tight Fit . . . Easy Action

- **Eastman Adapter Unions** prevent twisting and assure proper positioning of hose lines when being installed. Accurate machining assures leakproof metal-to-metal seat as effective as a ground joint union.
- **Eastman Angled Adapter Unions** eliminate the use of elbows and pipe unions, thereby reducing the number of threaded connections. Original Eastman design provides tight-fitting joint at any pressure.
- **Eastman, "First in the Field of Hydraulic Hose Assemblies,"** stands for the highest quality of material and workmanship—your best assurance of satisfactory service.

"Safeguarding Industry's Lifelines of Mobile Power"

EASTMAN MANUFACTURING CO.
Since 1914
Dept. IEN-12, Manitowoc, Wisconsin

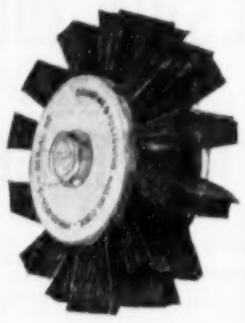
Straight and Angled Adapter Unions

Eastman *first in the field*
HYDRAULIC HOSE ASSEMBLIES

Send for Eastman Form No. 231-B, 232-B for sizes, angles available.

If you write maker identify as IEN - 13398

NEW VONNEGUT POLISHING HEAD WEIGHS JUST TWO POUNDS



FITS MOST ANY POWER TOOL

Now — a truly "bantam weight" Vonnegut Polishing Head for polishing curved and formed surfaces. (An excellent deburring tool also.) Its small, 6½" diameter lets it get into concave areas of smaller radii that can not be reached with the 16 and 32 brush heads. The twelve strips of abrasive—each only 1½" wide—and the smaller diameter requires less power, permitting use of smaller portable tools than needed for the larger heads. The combination—lighter head and tools—makes it ideal for sustained portable operations. Write for details.

Grinding and Polishing Machinery Corp.
SUCCESSORS TO VONNEGUT MOULDER CORPORATION
2530-D Winthrop Avenue, Indianapolis 5, Indiana

If you write maker identify as IEN - 13399

Now find motor coil shorts POSITIVELY and INSTANTLY...

New CROWN INTERNAL GROWLER

- Anyone can use it
- No Chance for Error!
- Meter Tells the Story!
- For AC Motors

POSITIVE . . . meter needle indicates short in coils of stators or armatures and reveals loose bars in rotors

FAST . . . No time wasted with hacksaw blades or guesswork. "Pinpoints" the location.

EASY . . . no training or experience needed. Meter gives the answer.

• CHECKS 115V. to 440V; stators 6" and up I.D.; armatures or rotors 6" to 14", operates on 115 V. AC.

MAIL FOR COMPLETE DATA

CROWN INDUSTRIAL PRODUCTS CO.
715 Amsterdam Street
Woodstock, Illinois

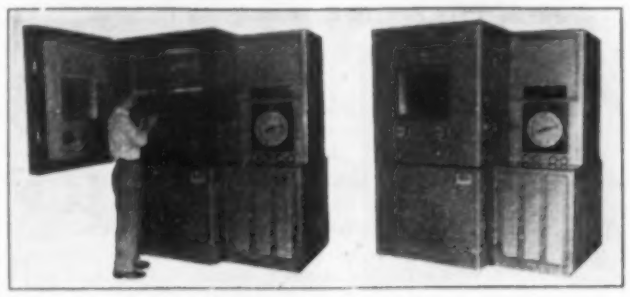
Please send full catalog information about the New Crown Internal Growler to:

Name_____
Company_____
Street_____
City_____ Zone____ State_____

If you write maker identify as IEN - 13400

TESTING . . Environment chamber, from minus 120 to plus 200 deg. F.

Source: CONRAD INDUSTRIAL COOLERS
52 West 4th St., Dept IEN, Holland, Mich.



One of many designs

New assembly of the environment chamber, previously described IEN-986-53, is intended particularly to test wire and cable, to wind samples on mandrels under any temperature condition in the range from minus 120 to plus 200 deg. F. Temperature can be held, controlled and recorded. The work can be viewed through a window at the front of the test chamber. It can be manipulated through hand access ports below the window.

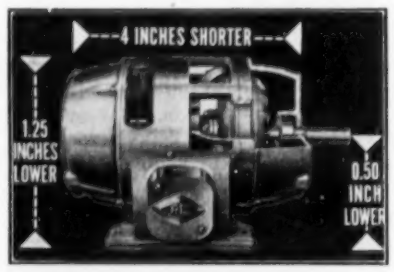
Mandrels on which the wire or cable winds are turned by external drives. The interior is illuminated. Mandrel diameters range from 1/16 to 18 inches. Other products than wire can be tested when the mandrels are removed.

Two refrigerant compressors operate in cascade. They are semi-sealed design and do not require lubrication in service. The cabinet mounts a stainless steel interior in an insulated housing with galvannealed exterior. The test chamber door and doors in front of the control housing and the indicating and recording equipment just below it, swing open for access. The compressors are mounted, also in accessible position, in their own compartment at the lower right.

If you write maker identify as IEN - 13401

DRIVE . . Induction motor with integral hydraulic coupling

Source: REULAND ELECTRIC CO.
Westminster & W. Mission, Alhambra, Calif.



Foot or flange mounting

Motors rating ½ to 1 hp. in the company's Fluid-Shaft line, previously described IEN-8442-49, are now assembled with a new "midget" fluid coupling. It permits assembly of the ½-hp. motor in a No. 203 frame with the fluid coupling to measure 4 in. less in overall length than the initial design. The complete line is available in standard frame sizes from No. 203 to No. 326 with ratings from ½ to 15 hp. Assemblies including magnetic brakes and geared heads also are available.

The coupling remains disengaged until the motor is practically up to full speed and so protects it against starting overloads. The action of the oil picks up the load easily to cushion shock. The gradual load pick-up permits using a smaller motor than might otherwise be required.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13402

lightweight fully insulated
CADDY
TYPE B *Electrode Holders*

Connected by the CADWELD PROCESS — the greatest advancement in arc welding in 20 years.

Complete CADDY Catalog on request.

CADDY ARC WELDING
ACCESSORY DIVISION
ERICO PRODUCTS, Inc.
2070 E. 61st PLACE, CLEVELAND 3, OHIO

If you write maker identify as IEN - 13403

FOR BETTER HANDLING

Look under "Trucks" or "Casters" in your classified phone directory for your nearest Nutting representative. Or write direct for Junior Catalog 52G.

SINCE 1891 **Nutting TRUCK & CASTER CO.**
2014 Division St. Faribault, Minn.

Export Sales Representative School International Inc.
4237 North Lincoln Avenue • Chicago 18, Ill.

If you write maker identify as IEN - 13404

TOOL CRIB CONTROL

New illustrated bulletin presents step-by-step procedure used profitably in hundreds of plants

How it works to —

- Record each employee's tools or gages, preventing theft and loss;
- Recover idle tools;
- Cut crib inventories;
- Reduce tool breakage;
- Locate each tool, loaned or in crib;
- Eliminate delays, saving man and machine time;
- Stop arguments and otherwise speed service;
- With no increase in crib personnel—

All described in Folder A-510 IEN

Procedures also available for gages, gage inspection, kits, permanent loans, blue prints, etc. Readily adapted to unusual requirements.

Write for your copy today

McCaskey INDUSTRIAL CONTROLS
PRODUCTION · INVENTORY · TOOLS · COSTS · MAINTENANCE
THE McCASKEY REGISTER DIV.,
Victor Adding Machine Co.
ALLIANCE, OHIO
Galt, Canada Watford, England

If you write maker identify as IEN - 13405

today's "wonder drug" for industry

The greatest cost-saving labor-saving FINISHING DEVELOPMENT *in a decade!*

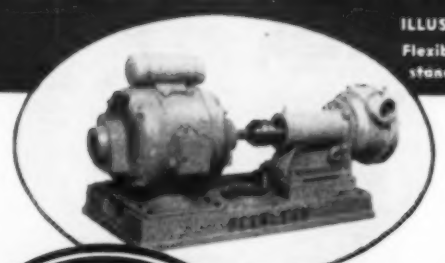
If you produce parts that require finishing, write today for **NEW, FREE eye-opening 52-PAGE CATALOG, "Supersheen Speed Finishing".** Learn how Supersheen Speed Finishing saves up to 95% on almost all types of parts with absolute uniformity, fewer rejects, finer finishes!

DEPT. G-12

ALMCO Supersheen
AMERICA'S LARGEST MANUFACTURER OF ADVANCED BARREL FINISHING EQUIPMENT—MATERIALS AND COMPOUNDS
ALBERT LEA, MINNESOTA

If you write maker identify as **IEN - 13406**

FOR PUMPING MODERATE CAPACITIES AGAINST MEDIUM AND HIGH HEADS USE THESE TURBINE VANE TYPE PUMPS



ILLUSTRATED—Flexible-coupled standard pump

PEERLESS TYPES TVE & TVB

PEERLESS PUMPS

Capacity: to 58 gpm.
Heads: to 800 ft.
H.P. Range: to 20 h.p.

ILLUSTRATED—Close-coupled self-priming pump

For pumping hot or cold clear or vaporous liquids

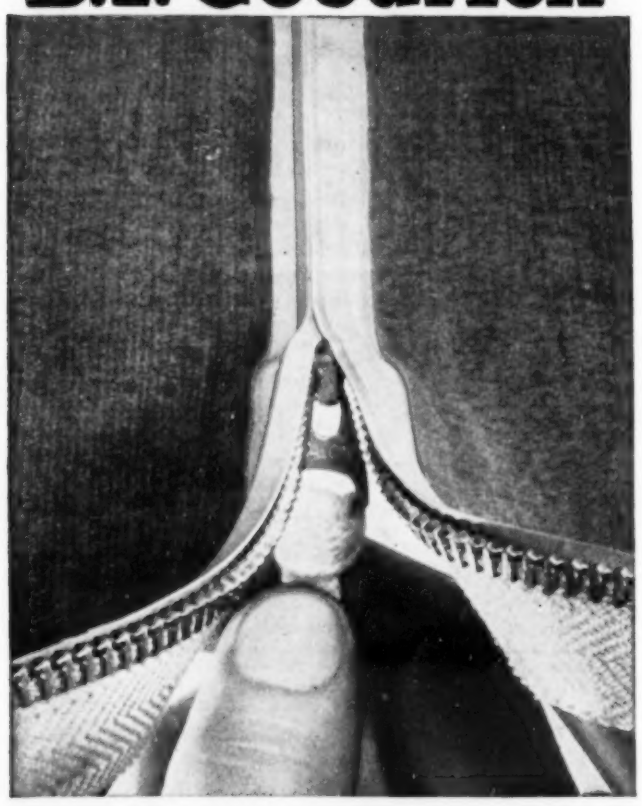
Write today for Peerless Pump Bulletin No. B-2205. Profusely illustrated with pictures of both standard and self-priming pump types. Also contains sectional pump drawings, elevations and dimensional data, head-capacity characteristics.

PEERLESS PUMP DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION

Los Angeles 31, California and Indianapolis 8, Indiana
Offices: New York, Chicago, St. Louis, Atlanta; Dallas, Plainview and Lubbock, Texas; Fresno, Los Angeles; Phoenix; Albuquerque, N. M.; Tulsa

If you write maker identify as **IEN - 13407**

B.F. Goodrich



New B. F. Goodrich seal is watertight, airtight, ...zips open fast

A NEW KIND OF SEAL keeps gases, liquids, dirt *in* or *out*. Here's how it works:

Rubber lips are molded with hairline precision so that they fit together tightly. They press together even without pressure to seal effectively. And with pressure against the lips, the seal actually tightens. The rubber seal is applied to an ordinary zipper which zips open or shut in a hurry.

The B. F. Goodrich Sealing Zipper is so flexible it goes around curves and odd shapes where clamps won't work. Can be made of compounds to resist weather, oils, gasoline, chemicals. Can be sewn or cemented to fabric, metal, wood, glass. The rubber can be made to match any color.

It's ideal for any use that combines a need for an airtight, watertight seal with a need for quick opening. The B. F. Goodrich Company, Zipper Division, Akron, Ohio.

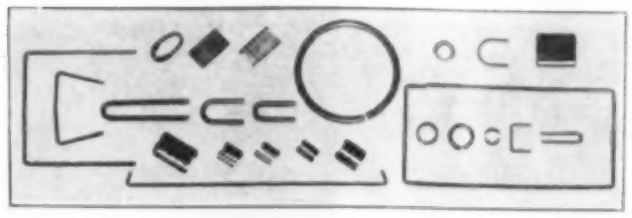
Send Now For Free Folder

Gives design advantages, successful case histories, suggested uses. Shows various zipper styles. Write to **The B. F. Goodrich Company, Dept. A-103, Akron, Ohio.**

If you write maker identify as **IEN - 13409**

SOLDERING . . Preforms to order, made of soft or hard strip and wire

Source. ART WIRE & STAMPING CO.
225-29 High St., Newark 2, N. J.



Typical shapes are shown

The company announces availability of its production equipment, previously concentrated upon manufacture of wire parts and small metal stampings, for quantity production, in specified shapes and sizes, of both soft and hard solder preforms. Forms are available in flat strip to 0.031 in. in thickness and to 2 in. in width or in wire to ⅛ in. in sectional diameter. The shapes are suited particularly for use in induction soldering operations. They are packaged to help them maintain shape until they are used.

If you write maker identify as **IEN - 13410**

CLEANING . . Degreasing solvent to use instead of carbon tetrachloride

Source: TURCO PRODUCTS INC.
6133-37 S. Central Ave., Los Angeles 1, Calif.

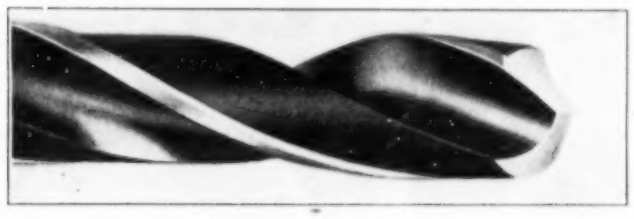
Particularly for electric equipment

Turco-Solv is a new non-conductive non-corrosive solvent for use on metal, wood and painted surfaces. Its flash point tests at about 200 deg. F. It does not leave flammable vapors or residues upon evaporation. It can be employed for maintenance or production cleaning, by hand or in washing machines. It removes grease, oil, metallic particles, carbon dust. It does not require neutralization after application.

If you write maker identify as **IEN - 13411**

DRILLING . . Small hole drills are made and pointed in single set-up

Source: WHITMAN & BARNES
40602 Plymouth Road, Plymouth, Mich.



Designed for precision use

New line of small hole drills, ranging from 0.0059 to 0.0625 in., is available with the flutes ground from solid heat treated blanks and with the point ground in the same set-up as that for grinding the flutes. The cutting lips bear exactly correct relation to the flutes and to the drill axis. The drills are available from stock.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 13412**

Cut eye-strain IN ALUMINUM WELDING

Here's how:

★ ***SPECIAL TINT***—only slightly opaque—filters glare in aluminum welding. Acetylene, hydrogen flame and burning flux look like a pale cone of light at burner tip of welder's torch.

★ ***EYE STRAIN GONE***—mistakes reduced — production speeds up!

★ ***SCIENTIFICALLY GROUND***—The Burt-Weld Lens is polished and optically perfect. Fits any goggle taking 50 mm. round lens.

Write for Bulletin and Prices

with *McDonald*
BURT-WELD LENS

B. F. McDONALD CO.
Manufacturers & Distributors of Industrial Safety Equipment
5721 WEST 96TH ST., LOS ANGELES 45, CALIF.
Other Offices in San Francisco & Houston

If you write maker identify as **IEN - 13413**

INDUSTRIAL INKS To Mark Anything!

Whatever the substance, Phillips has an ink to mark it permanently and legibly—or can make one. Marking experts insist on "Clear Print" Wood Block Stamp Pads and Opaque Inks. They get clear, sharp, fast-drying impressions. Also inks for brush, pen, stencil or machine application available in a variety of colors and quantity containers.

★ Quick Laboratory Service On Your Problem Markings

★ To Permanently Mark . . . Metals, Plastics, Glass, Wood, Paper, Leather, Ceramics—glazed, varnished or lacquered surfaces and virtually every other known material.

L. A. PHILLIPS, *President*
PHILLIPS PROCESS CO. INC.
192 MILL STREET
ROCHESTER 14, N. Y.

If you write maker identify as **IEN - 13414**

HERE'S A STORY EVERY PLANT OPERATING MAN SHOULD READ

"Heating in our main switch was causing Shutdowns But we stopped them cold by changing to Fusetron Dual Element Fuses."

"In the Fall of 1951 in our cafeteria, we installed a 1200 amp switch to control the lighting, refrigeration and a 115 ton air conditioning load.

"Everything was fine until the temperature reached 85 degrees and the summer air conditioning load came on. Then we had trouble.

"Three times in May, 1952 during our noon rush our whole place was shut down.

"We called in Mr. Menees of the Arkansas Power and Light Co.

"He suggested that the trouble was due to the adding of the Summer temperature to the normal heating of the fuses and recommended that we install FUSETRON dual-element fuses, as these modern fuses operated at a much cooler temperature than other fuses.

"To date, June 19, 1953, over one year since we made the change, we have not had a shutdown due to a fuse blowing even though today's temperature outside is over 100 degrees.

"The cooler operation of FUSETRON fuses stopped shutdowns cold for us."

C. A. Franke, President
Franke's Inc., Little Rock, Ark.

You too can profit by the 10 POINT PROTECTION of FUSETRON dual-element FUSES

1* Protect against short-circuits.
2 Protect against needless blows caused by harmless overloads.
3 Protect against needless blows caused by excessive heating — lesser resistance results in much cooler operation.
4 Provide thermal protection — for panels and switches against damage from heating due to poor contact.
5 Protect motors against burnout from overloading.
6 Protect motors against burnout due to single phasing.
7 Give DOUBLE burnout protection to large motors — without extra cost.
8 Make protection of small motors simple and inexpensive.
9 Protect against waste of space and money — permit use of proper size switches and panels.
10 Protect coils, transformers and solenoids against burnout.

* Fusetron Fuses have high interrupting capacity as shown by tests of the Electrical Testing Laboratories of New York City in December, 1947.

FUSETRON
TRUSTWORTHY NAMES IN ELECTRICAL PROTECTION
BUSS

BUSSMANN MFG. CO. University at Jefferson
ST. LOUIS 7, MO. (*Division McGraw Electric Co.*)

If you write maker identify as **IEN - 13416**

Cambridge Surface Pyrometers are light weight, portable instruments—accurate but rugged—for measuring temperature of mold cavities and flat surfaces, still or moving rolls, and within-the-mass temperature of materials in a plastic or semi-plastic state. Write for Bulletin 194-SA; 33 illustrations, many applications.

CAMBRIDGE INSTRUMENT CO., INC.

3710 Grand Central Terminal, New York 17

PIONEER MANUFACTURERS OF PRECISION INSTRUMENTS

If you write maker identify as **IEN - 13417**

JEFFREY

All-Purpose

CAR PULLER

Spotting cars for loading or unloading; docking barges; handling moving operations in lumber yards, foundries, steel mills and many other plants. Two types—5000 or 10,000 lb. Starting Rope Pull. Bulletin 861 gives specifications. Send for it.

THE JEFFREY MANUFACTURING CO.
Columbus 16, Ohio

IF IT'S MINED, PROCESSED OR MOVED ...IT'S A JOB FOR JEFFREY!

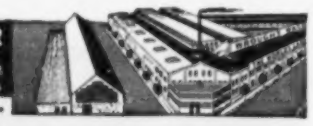
sales offices and distributors in principal cities

If you write maker identify as **IEN - 13418**

Geared to Industry's Production Demands Since 1887

Offering the most complete line of washers available today . . . all types and sizes, all materials, all finishes. More than 25,000 sets of dies. Let us quote on your requirements.

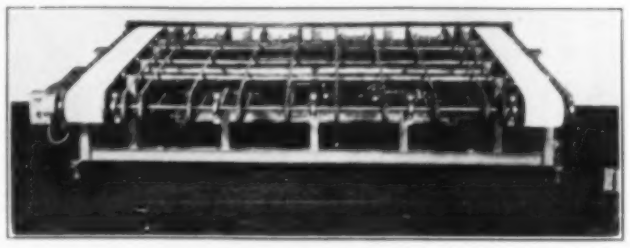
WROUGHT WASHER MANUFACTURING CO.
The World's Largest Producer of Washers
2207 S. BAY ST., MILWAUKEE 7, WIS.



If you write maker identify as **IEN - 13419**

HANDLING . . Positioner and conveyor for thin gage sheets to be sheared

Source: FRIED STEEL EQUIPMENT MFG. CORP.
526-30 E. 119th St., New York 35, N. Y.



Ask for complete Catalog FC-180

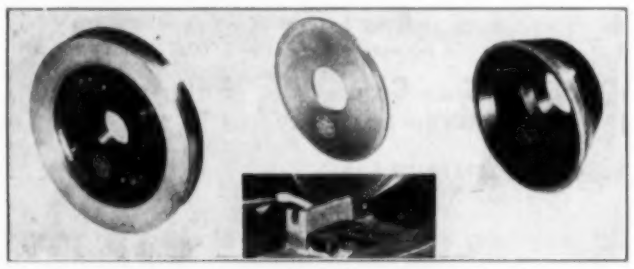
Narrow strips, as well as wide pieces, can be handled as they come from a shearing machine by this new design of Liftveyor, previously described IEN-585-50. The new machine, like the initially designed one, applies at the rear of a shearing machine to present a row of vertical pneumatic pistons carrying ball heads beneath the back gage. A valve controls these pistons to hold them up so a sheet will ride on the support they provide level with the back gage for accurate positioning in relation to the blade. They retract when the sheet has been positioned and the cut is made so the cut piece falls upon the motor driven Veelox belts for movement toward the rear to clear the shear for the next cut.

When narrow strips are being cut from a sheet and the support provided by the ball head pistons is not required they are permitted to remain in retracted position and two flat belts, one at each side of the assembly, assist in catching the narrow cut strips to carry them to the rear. The machine can have 8 or 10-in. belts on one or both sides.

If you write maker identify as **IEN - 13420**

GRINDING . . Diamond wheels for carbide tools, employ metal bond

Source: ACTION DIAMOND TOOL CO.
4543-47 W. Grand Ave., Chicago 39, Ill.



Free demonstration upon request

New alloy of metal has been developed by the company to serve as the bond in its new line of diamond grinding wheels. The alloy will not glaze or load in action. It supports the diamond particles for free cutting action. The wheels are designed to operate with a soluble oil coolant. In a test application, the wheels shown in the center of the illustration cut a ⅛ in. slot 1 in. in length in a carbide blank to ⅛ in. in depth in a little under one minute.

The plain wheel is available in ⅜ to 14 in. diameter. Cup wheels, to the left in the illustration, range from 5 to 14 inches. Flaring cup wheels, to the right, range from 3 to 5 inches. Any desired diamond mesh concentration or grit size can be specified.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 13421**

Is Space an Important Factor?

Then Use This Distinguished Line of Close-Coupled Pumps

DISTRIBUTORS IN PRINCIPAL CITIES also BULLETIN 120

AURORA always PUMPS — **AURORA PUMP COMPANY**

SUBSIDIARY OF THE NEW YORK AIR BRAKE COMPANY
52 LOUCKS STREET • AURORA, ILLINOIS

If you write maker identify as **IEN - 13422**

NICHOLSON MAKES

FREEZE-PROOF

Steam Traps

for Every Plant Use

Because they drain completely when cold, these four types of Nicholson steam traps are positively freeze-proof. Can be freely installed outdoors. Universally recommended for use in lines which need not be in continuous use during cold weather, because they are freeze-proof and because their 2 to 6 times average drainage capacity results in minimum heat-up time. The non-air binding feature of Nicholson traps also notably facilitates heat transfer in severe weather. Size ¼" to 2"; pressure to 250 lbs.

BULLETIN 853
159 Oregon St., Wilkes-Barre, Pa.

W. H. NICHOLSON & CO.
TRAPS · VALVES · FLOATS

If you write maker identify as **IEN - 13423**

Cut Polishing Time Improve Surface Quality

with "LINDE" FINE ALUMINA POWDERS

Obtain superior finishes, free from microscopic pits and scratches in a fraction of the usual polishing time. Use less abrasive and use it directly without levigation and other wasteful preparatory steps. They can also be compounded with waxes and used in stick form.

LINDE Fine Alumina Powders are characterized by ultra-fine, uniform particle size, high purity, and swift polishing action. They have gained wide-spread acceptance in polishing materials ranging from metallographic specimens to gemstones and noble metals.

Call or write any LINDE office and we will be glad to discuss your particular polishing applications.

	Type A	Type B
Chemical Composition	Alpha Al_2O_3	Gamma Al_2O_3
Particle Size (approximate)	0.3 Microns	Less than 0.1 Microns
Hardness (Moh's) (Equivalent to crystalline material)	9	8
Crystalline Structure	Hexagonal	Cubic

The term "Linde" is a trade-mark of Union Carbide and Carbon Corporation.

LINDE AIR PRODUCTS COMPANY
A DIVISION OF UNION CARBIDE AND CARBON CORPORATION
30 East 42nd Street, New York 17, N. Y. UCC Offices in Other Principal Cities
In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto

If you write maker identify as **IEN - 13424**

The Viking Pump Company is represented by a nation-wide sales and service organization in key cities from coast to coast . . . from Canada to the Gulf. Is your pumping installation operating at high efficiency? Do you have a new pumping application? Write or call the Viking representative nearest your plant for service.

★ATLANTA
Viking Pump Company
1214 Spring St. N.W.
Phone Vernon 9005
★CHICAGO 6
Viking Pump Company
949 W. Washington Blvd.
Phone State 2-6818
CLEVELAND 13
Viking Pump Company
310 Marshall Bldg.
Phone Cherry 1-0887
★DALLAS
Viking Pump Company
2175 W. Commerce Street
Phone Randolph 3618
★INDIANAPOLIS 25
Viking Pump Company
407 Madison Avenue
Phone Plaza 8349
KANSAS CITY 8
Viking Pump Company
1907 Main Street
Phone Harrison 8033
★LOS ANGELES 58
Viking Pump Company
4632 Long Beach Avenue
Phone Adams 3-8165
MILWAUKEE 3
Viking Pump Company
610 West Michigan St.
Phone Broadway 6-0807
★NEW YORK 18
Viking Pump Company
614 W. 46th St.
Phone Longacre 3-3816
★AMARILLO, Texas
Wilbern Bros. Co.
101-13 Houston Street
★BALTIMORE 1
Wallace Stebbins Co.
Charles and Lombard Sts.
BIRMINGHAM 5
Pump Shop, Inc.
1015 Seventh Ave. So.
BOISE
Olson Mfg. Co.
4000 Warm Springs Ave.
★(BOSTON SUBURB)
Somerville, Mass.
Hayes Pump & Machinery Co.
100 Vine Street
★BUFFALO 10
Boot, Neal Co.
69 Peabody Street
★CHARLOTTE, N. C.
Southern Pump & Tank Co.
1730 N. Tryon St.
★CINCINNATI 3
Wm. T. Johnston Co.
214 Vine Street
★DENVER 16
Eaton Metal Product Co.
4800 York Street
Also Albuquerque, Casper, Billings and Omaha
★DENVER 17
Hendrie-Bolthoff Co.
1635 17th Street
★DETROIT 26
Barr Machinery Co.
Barr Building
EL PASO, Texas
Geo. S. Thompson Co.
611 No. Campbell St.
Also Phoenix, Arizona
EVANSVILLE 8, Indiana
Shouse-Bell Machinery Co.
222 Court Bldg.
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Union Supply Co.
Also Artesia, New Mexico
★HOUSTON 1
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900-910 St. Charles Street
Branches: Dallas, San Antonio, Edinburg and Rosario
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Noll-La Valle Supply Co.
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★MARSHFIELD, Wisconsin
Felker Bros. Co.
★MEMPHIS 3
E. C. Blackstone Co.
600 Madison Ave.
MINNEAPOLIS 3
Reed Marr
1500 Hennepin Ave.
★NEW ORLEANS 12
Mengo Pump and Machinery Co.
549 Dryades Street
★ODESSA, Texas
W. L. Sumner Co., Inc.
P. O. Box 1626
★PHILADELPHIA 30
W. H. Eagan Co., Inc.
2336-38 Fairmount Avenue
PITTSBURGH 22
Power Equipment Co.
Oliver Building
RICHMOND
O'Neill Pump & Engineering Co.
601 E. Franklin St.
SALT LAKE CITY 1
Utility Engineering, Inc.
610 Dooly Bldg.
★SAN FRANCISCO 1
De Laval Pacific Co.
61 Beale Street
Also Seattle and Portland
ST. LOUIS 1
Lane Machinery Co.
Seventh and Market Street
★TULSA 5
Chas. Wheatley Co.
414 So. Detroit Ave.

VIKING — AN HONORED NAME IN PUMPING

★ STOCK

See Our Catalog in SWEET'S

VIKING PUMP COMPANY
CEDAR FALLS, IOWA

If you write maker identify as IEN - 13425

ROLL THE PART AGAINST THE DIE with This

ACROMARK Model No. 927
PERIPHERAL MARKING MACHINE

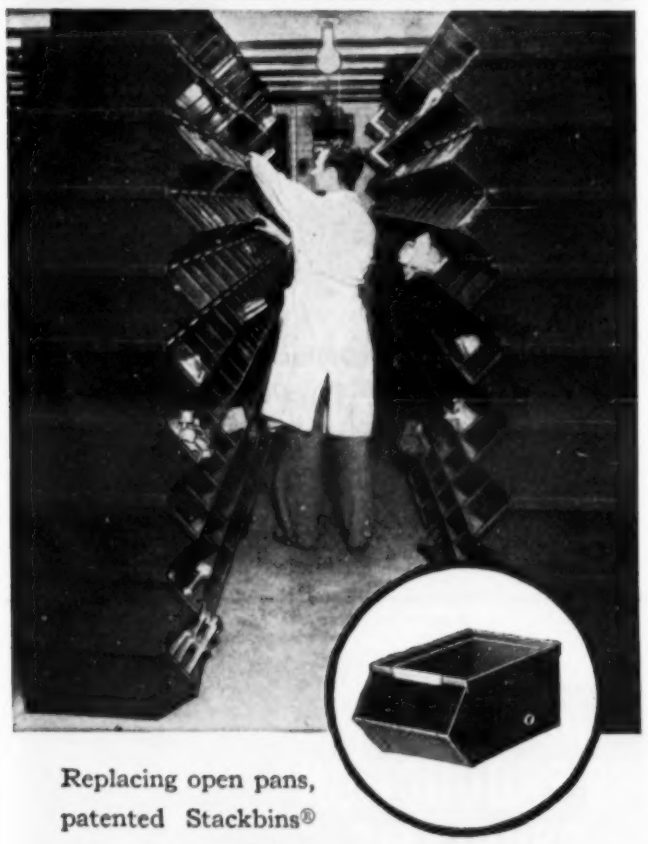
Such items as speedometer and counter wheels, rotating gauge wheels, timer rings and a variety of products requiring numbering, calibrations, lettering or design around the peripheral surface can be accurately and quickly marked with this machine.

WRITE FOR LITERATURE AND PRICES

ACROMARK
THE ACROMARK COMPANY
7 MORRELL ST., ELIZABETH, NEW JERSEY

If you write maker identify as IEN - 13426

Bring parts closer to work



Replacing open pans, patented Stackbins® save space and bring parts in production closer to workers' hands—allow parts to be carried by truck, pallet, or conveyor from stock-rooms to assembly lines in Stackbins, without transferring contents. Stacking compactly, Stackbins with full-width hopper fronts and perfectly smooth interiors save labor, space and time in storage, production or assembly.

Write for new catalog describing entire Stackbin System of materials handling aids. Stackbin Corp., 1077 Main St., Pawtucket R. I.

Manufactured and sold in Canada exclusively by Wickware-Stackbin, Ltd., Ottawa.

STACKBIN SYSTEM
"Stacked and Still Accessible"

If you write maker identify as IEN - 13428

FLOORS . . Steel mesh and filler for areas subject to heavy traffic

Source: UNITED LABORATORIES INC.
16803 Euclid Ave., Cleveland 12, Ohio

Technical data and instructions upon request

Steel-Rock trade names a new packaged combination of steel mesh and a resilient filler to apply over floor surfaces subject to heavy traffic. Application can be made on new or old wood or concrete, indoors or outside, at a depth ranging from ⅜ to 1 inch. The filler compacts to meet the level of the steel ribs in the mesh so truck wheels can ride on steel but will not slide.

If you write maker identify as IEN - 13429

LATHE TOOLS . . Carbide tipped, 11 styles, ground and color coded

Source: ADAMAS CARBIDE CORP.
998 S. 4th St., Dept. ADT3, Harrison, N. J.

Ask for Catalog T-53

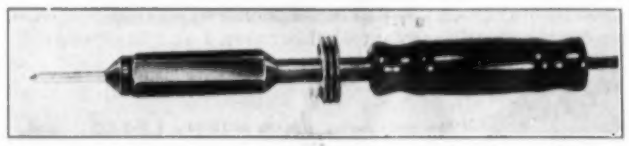
Right and left hand tools for straight turning without a lead angle, with a 15-deg. lead angle, square nose, pointed nose with an 80-deg. included angle, pointed nose for threading with a 60-deg. included angle, right and left hand end cutting off-set tools, and right and left hand side cutting off-set tools are included in the company's new tungsten carbide tipped line.

Each tool is finish diamond ground and carries a distinctive color coded shank marking. Each is available in grades to cut steel, cast iron and non-ferrous materials. The tips are silver brazed on cold drawn steel shanks. The cutting edges are plastic dipped for protection. All styles are in stock.

If you write maker identify as IEN - 13430

SOLDERING . . Electric iron rates 100 watts, employs a ¼ in. tip

Source: HEXACON ELECTRIC CO.
155 W. Clay Ave., Roselle Park, N. J.



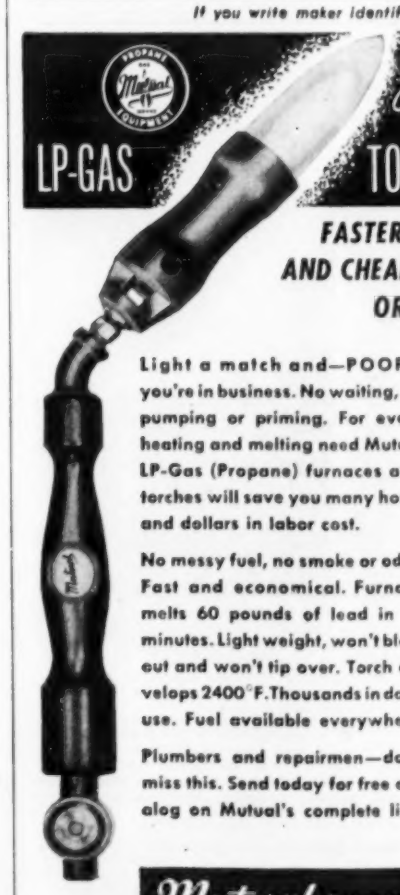
For fast action

Model P-114 is a new 100-watt unit in the company's line of electric soldering irons. It is particularly designed for use in production lines. The comparatively small tip can reach into confined areas. List price is $8.25.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13431

LP-GAS Mutual TORCH & FURNACE



FASTER, CLEANER, SAFER AND CHEAPER THAN GASOLINE OR KEROSENE

Light a match and—POOF—you're in business. No waiting, no pumping or priming. For every heating and melting need Mutual LP-Gas (Propane) furnaces and torches will save you many hours and dollars in labor cost.

No messy fuel, no smoke or odor. Fast and economical. Furnace melts 60 pounds of lead in 12 minutes. Light weight, won't blow out and won't tip over. Torch develops 2400°F. Thousands in daily use. Fuel available everywhere.

Plumbers and repairmen—don't miss this. Send today for free catalog on Mutual's complete line.

No. 7 Furnace

No. 5 Torch

Mutual LIQUID GAS EQUIPMENT CO., Inc.
3606 WEST IMPERIAL BLVD., INGLEWOOD, CALIFORNIA

If you write maker identify as IEN - 13432

ALLIS-CHALMERS Induction HEATER

When Induction Hardening Replaced Carburizing

REJECTS ELIMINATED

A LEADING AIRCRAFT BUILDER had a high reject rate while carburizing hydraulic control valves. In addition, production was slow. Rework after rework was necessary because material was brittle and straightening was difficult, if not impossible. Depth of carburization was also hard to control . . . and it was a dirty job, too!

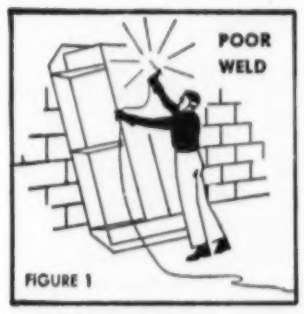
Picture changed overnight — Now, with Allis-Chalmers induction heaters rejects or reworks are eliminated; depth of hardening is held between .078 inches and .080 inches; production is greatly increased; and it's a clean, pushbutton type job.

Where there's a problem with warpage, scaling, or heat control, even a relatively low production item can often be profitably processed using induction heat.

Bring your problems to Allis-Chalmers. Call your nearby Allis-Chalmers district office or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-4170

ALLIS-CHALMERS

If you write maker identify as IEN - 13433



How Worthington Welding Positioners help your welders produce BETTER WELDS

When your welder has to climb over, prop, or flop the work, he's wasting time and can only obtain good downhand welding over a limited area (Figure 1. With a Worthington Welding Positioner, the work is quickly tilted or rotated automatically into position for correct downhand welding. Write for Bulletin 210D. Worthington Corporation, Plainfield, N. J.

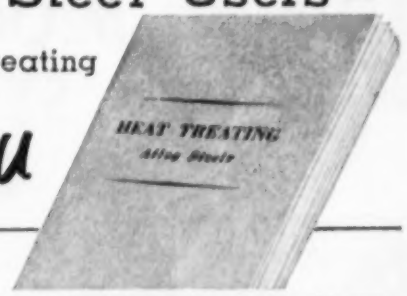
Y.2.5

WORTHINGTON
Welding Positioners—Turning Rolls

If you write maker identify as IEN - 13434

Alloy Steel Users—

this heat treating handbook is for *you*



Jam-packed with valuable information on heat treating, this new 55-page handbook has been specially prepared for those working with alloy steels.

It contains all salient data for normalizing, annealing, carburizing, flame hardening and other heat treating methods. Includes data and charts on critical points, nitriding depths, mechanical properties and other essential information. You'll find it invaluable for reference and well worth adding to your personal library. For a complimentary copy send your IENquiry today or write Frasse.

Frasse alloy steel stocks include:

Rounds	3140	4340
Hexagons	4130	8620
Sheets	4142	TS 8620
Plates	4142 H.T.	8630
Tubes	TS 4142	8740
	TS 4142 H.T.	

Aircraft grades conform to Gov't "specs"

Peter A. FRASSE and Co., Inc.
17 Grand Street, New York 13, N.Y.
Hartford • Philadelphia • Buffalo • Syracuse

If you write maker identify as IEN - 13435

JOHNSON BEARINGS in over 900 standard sizes

• You can secure virtually any size sleeve bearing you need from your local Johnson Bearing Distributor. He handles the widest range of sizes on the market . . . from ¼ inch to 4½ inch ID, the wall thickness you need and the right length. You'll save time with Johnson General Purpose Cast Bronze Bearings . . . and save money, too.

JOHNSON BRONZE CO.
476 So. Mill St., New Castle, Pa.

OTHER BEARING TYPES
Electric Motor • Graphited • Self-Lubricating Powder Metallurgy • Universal Bronze Bars • Babbitt.

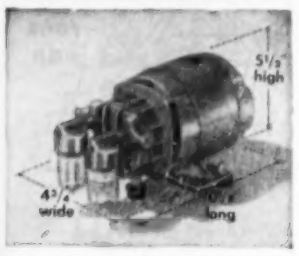
JOHNSON JB BEARINGS
Sleeve-Type

WRITE TODAY for your copy of the new catalog

If you write maker identify as IEN - 13436

Announcing Two Compact NEW GAST ROTARY Integral-MOTOR AIR PUMPS

FOR ORIGINAL EQUIPMENT APPLICATIONS AND PORTABLE USES



Note the compactness! Yet these Integral Motor-Pumps (basic Model No. 0406 shown) deliver .6 CFM—to 15 PSI or 25 inches Vacuum. 1750 RPM with 1/12 HP G.E. Motor.

It's a VACUUM PUMP! For vacuum, Model 0406-V2-154X has already proved its advantages as a component of industrial instruments requiring air flow; as a portable air sampler, etc.

It's an AIR COMPRESSOR! For pressure, Model 0406-P2-154X is in use on special machines for textile wear testing; as a laboratory compressor, etc.

Both OIL-LESS AND STANDARD LUBRICATED TYPES OFFERED—VARIOUS ACCESSORIES

Write FOR NEW DATA SHEETS on 0406 Integral Motor-Pump Models.

You can get absolutely oil-free air with completely oil-less models (never need lubrication); also standard lubricated models. Altogether, Gast offers a wide range of Integral Motor-Pump Models from 1/12 to 1/3 HP. *Investigate now!*

Same model, but with handle, gauges, nipples, etc., to show typical accessories we can furnish.

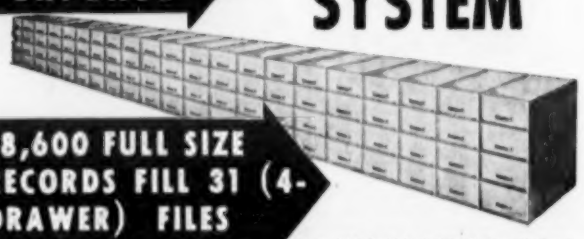
Original Equipment Manufacturers for Over 25 Years

GAST ROTARY — AIR MOTORS (TO THREE H.P.) · COMPRESSORS (TO 30 LBS.) · VACUUM PUMPS (TO 26 INCHES)
GAST MANUFACTURING CORP., 119 Hinkley St., Benton Harbor, Mich.

If you write maker identify as IEN - 13437

SAVE TIME, SPACE AND EXPENSE WITH THE NEW

MICROCARD SYSTEM

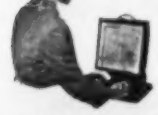


18,600 FULL SIZE RECORDS FILL 31 (4-DRAWER) FILES AT A COST OF ABOUT $6,400.00

IN MICROCARD FORM THESE RECORDS CAN BE STORED IN ONE SMALL CARD FILE

AT A COST OF ABOUT $400.00

3" x 5" MICROCARD HOLDS 50 TO 80 FULL SIZE PAGES
MICROCARD READER ENLARGES CARDS 26 TIMES FOR EASY READING



Spend pennies now where dollars were disappearing! New MICROCARD SYSTEM is the economical, quick to find, read, and refile method of record storage. Figures available on your industry application.

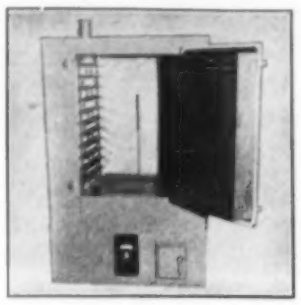
WRITE TODAY For Complete Information

MICROCARD CORP. • READER DIVISION
Box 314D • La Crosse, Wisconsin
Arrangements made with Kodak Ltd. of England to produce a similar reader

If you write maker identify as IEN - 13438

HEATING . . Electric oven for general use, 100 to 450 deg. F.

Source: STEINER-IVES COMPANY
Springfield Road near Milltown Road, Union, N. J.



For production

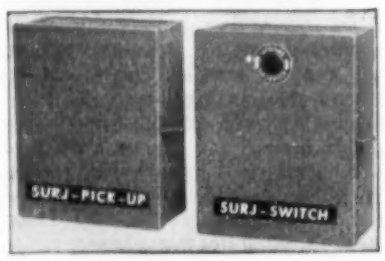
Three sizes, with a work chamber measuring 24 by 24 by 30 in. to 30 by 30 by 36 in., are included in this new line of electrically heated circulated-air ovens for operations such as coil baking, paint finishing, rubber and plastic curing, low temperature annealing. Operation can be specified on 110, 220 or 440-volt single or three-phase ac. Construction includes 4 in. of felted mineral rock wool insulation set in jackets and secured in the steel welded frame.

Temperature control is by means of a Partlow instrument. Variable air recirculation is by a non-sparking cast aluminum blower and ¼-hp. motor. Air movement is horizontal in connection with adjustable louvers in the work chamber. Dampers permit drawing in and exhausting the air to suit a given operation. The motor, blower, heaters and electrical controls are assembled in the base for checking and servicing.

If you write maker identify as IEN - 13439

RELAY . . Current operated to actuate counters or protect equipment

Source: AUTOTRON COMPANY
Box 722-C, Danville, Ill.



Literature on request

Surj-Pickup, for use in ac. circuits of any voltage with current to 80 amp., and Surj-Switch, for ac. circuits rating 110 or 230 volts, are new current operated relays that connect into a power circuit operating a machine. Current increase, due to a work load, can be employed to operate a counter that will total pieces being produced. A surge resulting from a dangerous overload will shut equipment down to prevent damage. Timers or auxiliary switches can be built in to make the relay selective. Then only the current peak for production of a work piece will operate the relay. Both units are enclosed in housings measuring about 11 by 9 by 5 inches. The relay contacts are rated at 5 amp. on 110-volt ac. Timers, when they are used, can be adjusted for any interval between 1 and 15 seconds.

If you write maker identify as IEN - 13440

Just over the horizon is a new record playback control that will direct a machine or process cycle from information stored on a magnetic tape. Such a control is being built now by General Electric Co., Dept. 6X-201, Schenectady 5, N. Y., for Giddings & Lewis Machine Tool Company. It is expected to double the present best production speed of a milling machine that manufactures "skin" structures for jet aircraft.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13441

Easy to use . . . Easy to clean . . . Easy to service

DERBY SEALER

MODEL 32 GUMMED TAPE DISPENSER

For Shipping Room and Production Line Packaging

• Rugged simplicity aptly describes the Model 32. Derby's exclusive, one-piece solid casting eliminates parts and provides added rigidity. What's more, the Model 32 is easy to clean, even during the hot summer months when machines tend to "gum-up."

• The Derby Model 32 accommodates any tape from 1" to 3" wide. Delivers from 4 inches to 34 inches of tape at one stroke.

• Derby's exclusive "moisture-control" system maintains a maximum high water level in the tank to assure a constant supply of water to the brush, no matter how fast tape is dispensed.

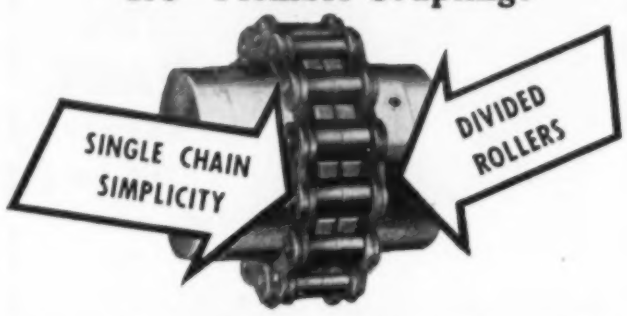
• Also available is the Model 32-T with tool steel shear-type blades for cutting reinforced strapping tapes. Blades have two cutting edges to double their useful life before resharpening.

For further information, write Dept. IF

DERBY SEALERS, INC.
Derby, Connecticut

If you write maker identify as IEN - 13442

Here's why it pays to use LINK-BELT "RC" Flexible Couplings



Equalized load / Proper balance at high speeds / Effective compensation for end float and misalignment

Yes, two big engineering features—single chain simplicity and divided rollers—combine to assure top performance, economical power transmission. And that's why you get the three big operating advantages listed above with Link-Belt RC Flexible Couplings. Find out how you can use these efficient couplings to provide positive flexible shaft connection . . . from fractional to 1000 hp. Ask your nearest Link-Belt office or distributor, or write for Folder 2363.

LINK-BELT
"RC" FLEXIBLE COUPLINGS 13.132

LINK-BELT COMPANY: Plants: Chicago, Indianapolis, Philadelphia, Colmar, Pa., Atlanta, Houston, Minneapolis, San Francisco, Los Angeles, Seattle, Toronto, Springs (South Africa), Sydney (Australia). Sales Offices, Factory Branch Stores and Distributors in Principal Cities.

If you write maker identify as IEN - 13443

U.S. Royal Cords and Cables

Safety Tested!

Flexibility · Dielectric strength
Smooth finish · Physical toughness

UNITED STATES RUBBER COMPANY
Electrical Wire and Cable Department
Rockefeller Center, New York 20, N. Y.

If you write maker identify as IEN - 13444

How to solve 39 PRODUCTION PROBLEMS with Mead Air Devices

Ready!

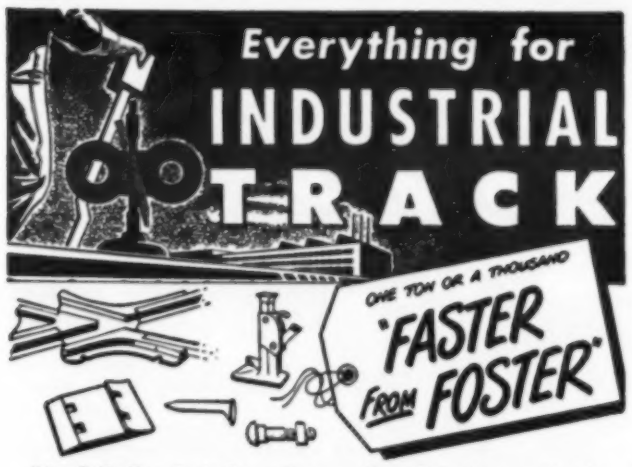
SEE how to use standard Mead units to make automatic or semi-automatic machines!

New 16-page photo-booklet shows how typical production problems were solved. Alert production men will readily adapt the ideas to their own needs.

Write for NEW "BOOKLET 39" *Now!*

MEAD SPECIALTIES CO., Dept. EA-123, 4114 N. Knox Ave., Chicago 41, Ill.

If you write maker identify as IEN - 13445



Need Rails—Switches—Frogs—Guard Rails or Track Tools? For best selections and prompt deliveries—try FOSTER—shipments of most items can be made from stocks in our five nationwide warehouses.

RAILS—New and Relaying Foster stocks are being replenished daily. Any items we did not have last week, we'll probably have next week. We match specifications and sizes to meet all your requirements on any job, new installations or replacements. *Call on Foster for all your needs for Industrial Track Equipment and Supplies.*

Write for Track Equipment Bulletin IE-12.

L.B. FOSTER CO.

CHICAGO 4, ILL. HOUSTON 2, TEX.
PITTSBURGH 30, PA. NEW YORK 7, N.Y.

If you write maker identify as IEN - 13446

CAPCO DOCK COVERS OFFER YEAR 'ROUND PROTECTION

Can be installed inside or outside of dock door . . . . models for various purposes.

SOLD AT A LOW COST

...and the cost is especially low because it pays for itself many times...saves time and money over many years.

- PREVENTS ACCIDENTS
- ONE MAN CAN OPERATE
- FIREPROOF
- WATERPROOF
- DURABLE—LONG LIFE
- DEPENDABLE

BEAT THE BAD WEATHER

CAPCO Dock Covers completely enclose the space between car and building doorways, protecting loading and unloading during bad weather. Recommended by safety engineers. No more wet merchandise in the rain . . . no more interruption during winter. Here's your insurance against loss of either heat or refrigeration; you have practically the same as indoor loading.

CAPCO

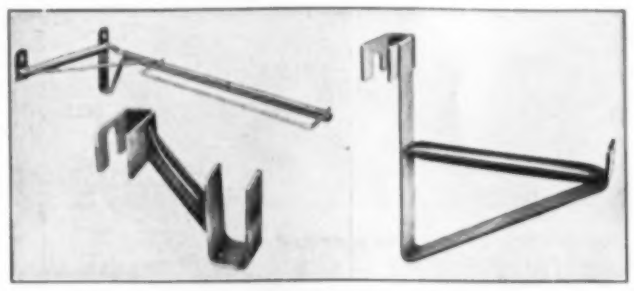
Be sure to write for illustrated literature and prices

622-24 PROSPECT AVENUE • KANSAS CITY 1, MISSOURI

If you write maker identify as IEN - 13448

SCAFFOLD . . Attachment brackets to erect a plank and ladder work stage

Source: BEAVER ART METAL CORP.
1221 Factory Ave., Ellwood City, Pa.



They apply on your ladders

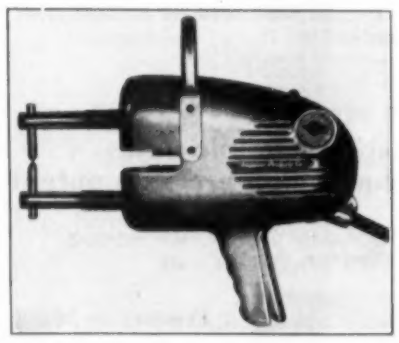
Step-A-Time designates a new collection of brackets with which ladders and planks can be set up to form a work stage in safe assembly. The bracket, to the left in the illustration, is supplied in pairs to secure to the side of a building. Two ladders are set up vertically to project through the rectangular rod clamps on the portions that extend outward horizontally from the building face.

The bracket, to the right, slides into place on the outer upright of the ladder for support by one of the rungs at a desired height. It, in turn, provides support for a plank that can lie parallel to one placed on two of the ladder rungs. The bracket, to the lower left, also slides into place on the outer upright of the ladder to support a guard rail. Each bracket is made of steel. Threaded parts are zinc coated. Frames are finished with baked red enamel.

If you write maker identify as IEN - 13449

WELDING . . Portable spot machine rates 3/16 inch, Thyratron control

Source: AMPOWER PRODUCTS CO.
Box 464, Dept. IEN, Oak Lawn, Ill.



Weighs 26 pounds

The company is now prepared to sell, as well as to manufacture, the portable spot welding machine, previously described IEN-2462-53. The machine will weld aluminum sheets, mild, stainless, galvanized or cadmium plated steel, as well as other metals, to a combined thickness of $\frac{3}{16}$ inch. Standard throat depth measures 7 inches. Maximum opening is 3 inches. Electrode pressure is to 1,000 pounds. Operation is on 220-volt 60-cycle ac.

Operating speed is limited only by the ability of the operator to move the machine from one welding position to the next and to press the grip control. A built-in Thyratron timer can be set to govern the welding interval between 1/60 and 1 second. Assembly includes a transformer and electronic controls in an aluminum housing with provision for timer adjustment on the side and with a support loop for suspension from overhead. List price is $195.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13450

GRIPPING FORCE 15 TIMES AIR LINE PRESSURE

Speedy Air Vise helps you do dozens of operations faster, better, cheaper—by air pressure! Foot control valve opens and shuts vise instantly, leaving *both* hands free to produce *more!* Jaw opens up to 3 inches, holds castings, parts, jigs, etc. Compact and trouble-free.

Complete with Foot Control, Air Hose and Fittings . . . . . only **$36.00**

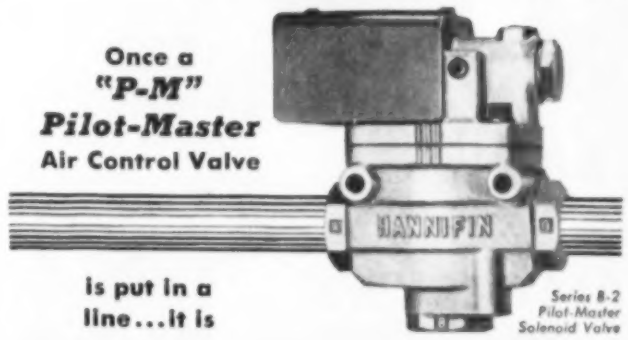
Prompt Delivery from Your Supplier or Write Direct

W. R. BROWN CORPORATION • 2645 N. Normandy Ave., Chicago 35, Ill.

AIR REGULATORS • AIR FILTERS • AIR GUNS • PORTABLE COMPRESSORS

If you write maker identify as IEN - 13451

Once a "P-M" *Pilot-Master* Air Control Valve



Series 8-2 Pilot-Master Solenoid Valve

is put in a line...it is

never removed!

That's right: You use a pipe wrench only once...then never touch the piping again. To renew this valve you simply replace a cartridge that contains all the working parts. The valve body—a simple, sturdy housing—need never be removed from the line. Think of what this can mean to you in reduced down time and lower maintenance costs! Plan now to standardize on Hannifin Pilot-Master Valves.

- 2-way, 3-way and 4-way
- All sizes ¼" to 1¼"
- Pressures from 15 to 150 P.S.I.

WRITE FOR BULLETIN NO. 231

HANNIFIN

Hannifin Corporation, 1107 S. Kilbourn Ave., Chicago 24, Ill.

AIR AND HYDRAULIC CYLINDERS • PRESSES • AIR CONTROL VALVES

If you write maker identify as IEN - 13452

IDEAL "Hand Type" CLEANERS

Cut Cleaning Time and Costs!

3 MODELS ...for EVERY CLEANING JOB

For easier, faster maintenance or production cleaning jobs—on machinery, stock bins, scrap pick up—there's an IDEAL "Hand-Type" Cleaner to meet your needs exactly—to save you money! Three great models, all built to rugged, real industrial standards. Get today's top cleaner value—get IDEAL!

IDEAL INDUSTRIES, Inc.
1100 Park Avenue, Sycamore, Illinois

Please give us FREE DEMONSTRATION of the IDEAL "Hand-Type" Cleaner for our plant.

NAME_____
COMPANY_____
ADDRESS_____
CITY_____ ZONE____ STATE____

If you write maker identify as IEN - 13453

USE LESS... *for Quicker Action*

Rockwood's Double Strength FOAM Liquid is faster spreading, more fluid and flows freely at sub-zero temperatures. It covers burning surfaces faster, seals off combustible vapors and flows freely around obstruction. Three parts of FOAM mixed with 97 of water form an excellent foam blanket that quickly re-seals if broken.

FOAM saves in many important ways. Saves cost of use, because *only 3%* of it forms your extinguishing agent. Saves storage space and shipping costs because it's concentrated. Saves vital time by its speedy, thorough action.

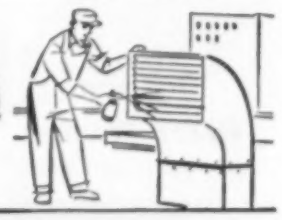
Write for *"Fire Fighting Products,"* Rockwood's illustrated catalog. Distributors in all principal cities.

ROCKWOOD SPRINKLER COMPANY

Engineers Water . . . to Cut Fire Losses

40 HARLOW STREET, WORCESTER, MASS.

If you write maker identify as **IEN - 13454**



MADE FOR MAINTENANCE!

BECKER "53"
CO₂ POWERED INDUSTRIAL
SPRAY GUN
Completely Portable

The new, versatile Becker Model "53" Sprayer operates without hoses, cords, or compressors. Sprays protective coatings, paints, solvents, cleaners, oils, etc. Powerful low-cost CO_2 cartridge sprays up to one 21-ounce containerful. With special attachment, tank can be charged from air hose (for liquids atomizing at 120 psi). Nozzle removes without pressure loss, adjusts from spray to stream. Acme-threaded neck closure, rugged brass and stainless inserts, cast aluminum head. See your Distributor or order direct postpaid.

SULLIVAN-BECKER CO., Dept. 193-M, KENOSHA, WISC.

If you write maker identify as **IEN - 13455**

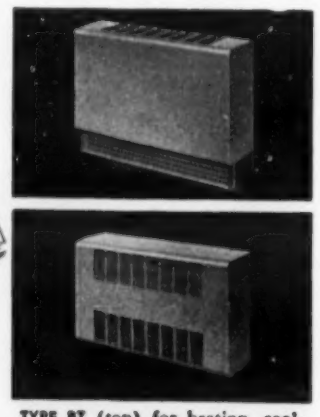
New SELF-POWERED SCRUBBER-VAC

Cleans Vast-Area Floors "By the Mile"

Operating independent of power lines, *Finnell's 218G Gasoline-Powered Combination Scrubber-Vac* is free to go wherever the operator guides it . . . working in and out of production areas with ease . . . *scrubbing continuously.* Applies the cleanser, scrubs, and picks up—*all in one operation.* Cleans up to 16,000 sq. ft. per hour! All working parts are operated by *one* engine (2 cyl., 4 cycle, 9.4 hp.). Brush spread, 36". For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 2612 East St., Elkhart, Ind.

FINNELL SYSTEM, INC. *Originators of Power Scrubbing and Polishing Machines* — 50th Anniversary FINNELL — BRANCHES IN ALL PRINCIPAL CITIES

If you write maker identify as **IEN - 13456**



yes, Modine CABINET UNIT

TYPE BT (top) for heating, cooling (in floor-mounted position), ventilating, with or without ducts.
TYPE FF (bottom) for heating only. Basic unit for exposed or recessed installation. Both for floor, wall or ceiling mounting.

GIVES YOU ALL THREE!

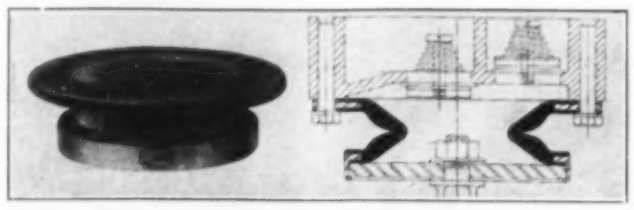
If you need economical equipment for heating, cooling and ventilating—and the expense of unit ventilators or air conditioners is not warranted — you'll find the perfect answer in Modine's newly expanded Cabinet Unit line.

Here, in a single unit, you can get quick, positive, quiet distribution of heated or cooled air, with or without ducts. Inexpensive accessories permit introduction, filtering, heating and distribution of fresh outside air for ventilation. See five different models at your dealer. Or write for free copy of new bulletin to Modine Mfg. Co., 1503 DeKoven Ave., Racine, Wisconsin. C-1187

If you write maker identify as **IEN - 13457**

DIAPHRAGM . . Bonded rubber for pumps, air and hydraulic equipment

Source: LORD MFG. CO.
1637-41 W. 12th St., Erie, Pa.



For specified use

Test application of this new bonded rubber diaphragm has set up a record of about 3,500 hr. of continuous operation, without drop in efficiency, in a pumping installation. Also there has been no indication of failure in the rubber portion of the diaphragm itself. It consists of a top plate, the diaphragm and a metal head. It is available in specified sizes and can be supplied in natural or synthetic rubber to handle corrosive solutions and fluids containing abrasives.

If you write maker identify as **IEN - 13458**

METAL . . Beryllium copper alloy combines strength and conductivity

Source: BERYLLIUM CORPORATION
P. O. Box 1462, Dept. IEN, Reading, Pa.

For springs, switch parts

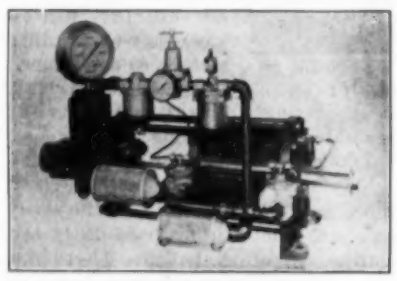
Beryldur is a new beryllium copper alloy that combines mechanical strength and toughness with good electrical conductivity. The properties can be varied by heat treatment. The alloy can be worked and moderately shaped after mill hardening treatment.

The alloy is produced in strip form either heat treatable or mill hardened. It is available in thicknesses from 0.005 to 0.187 in. and in widths from 1/8 to 6 inches. Cut lengths or coils can be specified. The mill hardened form requires no heat treatment of parts that are made of it.

If you write maker identify as **IEN - 13459**

PUMP . . Pneumatic hydraulic unit for low volume high pressure output

Source: ALDRICH PUMP CO.
20 Gordon St., Allentown, Pa.



Horizontal simplex

Pressure to 20,000 lb. is obtained on 90-lb. air supply with this new reciprocating pneumatic hydraulic pump. It is available in double-acting self-reversing design or in single-acting self-reversing intended for applications such as pressure testing and power supply for small presses. Equipment includes an air intake filter, pressure regulator, lubricator and hydraulic gage.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 13460**

A PAID NEWS ADVERTISEMENT BY CARBORUNDUM CO.

FREE BOOKLET . . . Mounted wheels and other abrasive products for portable and internal grinding

Here's valuable help for users of high speed portable and internal grinding equipment. A new 32-page booklet designed to help you select the correct abrasive product to improve workmanship and reduce production costs.

This booklet, "Mounted Wheels and Related Abrasive Products," tells you what gradings to use for roughing or finishing specific metals or materials. It covers silicon carbide and aluminum oxide mounted wheels, "MX" mounted wheels, and coated abrasive products—all made by CARBORUNDUM, your *only* source for *every* abrasive product.

All standard mounted wheel shapes are illustrated; wheel dimensions and mandrel sizes listed. A handy chart shows the coarse grit limits for each shape in "MX" and in each of the three bonds used: vitrified, resinoid, and rubber.

The coated abrasives section gives you complete information on Cloth Discs, Cartridge Rolls, "Nolap" Cloth Sleeves, and Industrial Cloth Sleeves.

Get your free copy of this helpful booklet. Send for it today—use the inquiry form provided by this magazine, or write us at Dept. IEN 81-311.

For help with any abrasive problem, call upon your CARBORUNDUM distributor or salesman.

"Carborundum" and "MX" are registered trademarks which indicate manufacture by The Carborundum Company, Niagara Falls, N. Y.

81-311

THE CARBORUNDUM COMPANY
Niagara Falls, New York

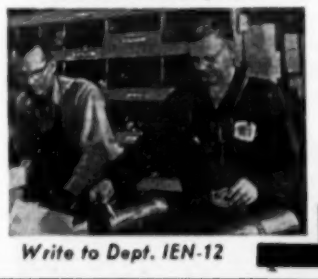
If you write maker identify as **IEN - 13461**

WON'T SMUDGE • RESISTS: DIRT GREASE WATER ACIDS

LABELON PLASTIC *Write on it* TAPE

STICKS WITHOUT MOISTENING

for ROUTING, STOCKROOM MAINTENANCE, INVENTORY, etc.



Write to Dept. IEN-12

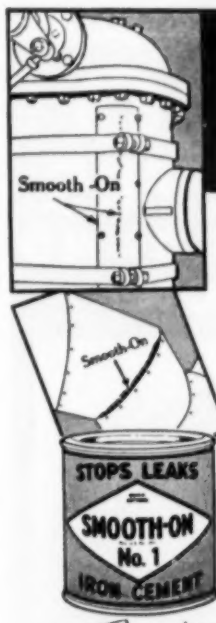
Nothing else like LABELON—the amazing "Write on it" plastic tape! Use it to label stockroom shelves, bins, tools, hard-to-mark parts; for indicating rejects and service department repairs; for marking laboratory equipment, supplies, experiments; for panel boards or wiring; for office files, folders, etc.

LABELON TAPE sticks without moistening to any smooth, clean surface—yet can be quickly removed. Resists heat up to 160°. Just write on it with pencil or stylus — message won't smudge. Choice of widths and colors. Handy dispenser with cutter bar.

See your nearest dealer, or write for sample and prices.

LABELON TAPE CO., INC.
450 Atlantic Ave., Rochester 9, N. Y.

If you write maker identify as **IEN - 13462**



Repairs both Cast and Sheet Metal

The quick-hardening, fast-clinging, temperature-resistant properties of Smooth-On No. 1 Iron Cement make it just right for countless repairs in industrial plants, shops, homes. It seals cracked castings, stops leaks in breeching, tightens loose rivets, bolts, screws and machine parts. Does not require use of heat or "gadgets." Any handy man can use it successfully. Buy Smooth-On No. 1 in 1-, 5- or 20-lb. size and keep it handy. If your supply house hasn't Smooth-On, write us.

FREE Famous Repair Handbook

Now in its 28th edition, this 40-page fully illustrated, pocket-size manual shows many short-cut, time-saving, money-saving repairs to machinery, equipment, pipe lines, etc. Drop us a line for YOUR free copy.

SMOOTH-ON MFG. CO., Dept 1
570 Communipaw Avenue, Jersey City 4, N. J.
SO-292

Do it with SMOOTH-ON
THE IRON REPAIR CEMENT OF MANY USES

If you write maker identify as **IEN - 13463**

"*Multi-Pic*"
WELD-CLEANING HAMMER

HAS 5 CONTOUR FORMING HEADS . . . . . PATENTED FREE-FLOATING HEAD DESIGN DELIVERS 5 SEPARATE CLEANING BLOWS WITH EACH SWING . . . CLEANS 5 TIMES FASTER . . . LASTS 5 TIMES LONGER THAN SINGLE-HEADED HAMMERS.

Illustrated Model MP-2-M $2.40 each.

Quantity Prices 10 to 20% Less.

WOOD HANDLE AND BRUSH EQUIPPED MODELS ALSO AVAILABLE. WRITE FOR BULLETIN FORM MP6

Mfd. & Ptd. By
BERNARD WELDING & EQUIPMENT CO.
Pioneer for Modern Welding
10220 AVENUE N — CHICAGO 7, ILLINOIS

If you write maker identify as IEN - 13464

MULTIPLE ASSEMBLIES FOR SMALL PARTS BELONG TO HORSE-AND-BUGGY DAYS

GRIES DIE CASTINGS GIVE YOU TINY PARTS LIKE THESE **COMPLETE** IN **ONE OPERATION**

Compare GRC small die castings with assemblies produced by other methods. GRC completely finished parts save you time, labor, money. Cast in one high-speed operation, they open broad opportunities for your new designs. Fast delivery on 100,000 pieces to many millions.

America's Foremost Producers of Tiny Die Castings

Smallness Unlimited
Max. Wt.: ½ oz.
Max. Lgth.: 1¾ in.

Write for bulletin and samples. Send prints for quotations.

GRIES REPRODUCER CORP.
Manufacturers of Small Castings Exclusively
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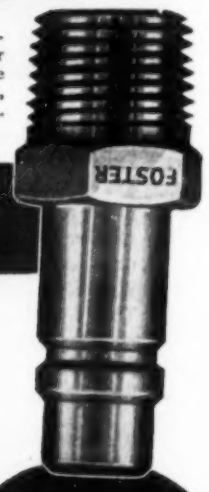
If you write maker identify as IEN - 13465

FOSTER
Chrome Sleeve Quick Detachable
COUPLERS
AND HOSE FITTINGS

- Reusable Socket Heads for Lower Replacement Cost!
- One Second Hookup Under Pressure!
- Tight-Seal, Dirt-Proof Construction! Leak-proof!
- Instant Automatic Flow! Swivel Action!

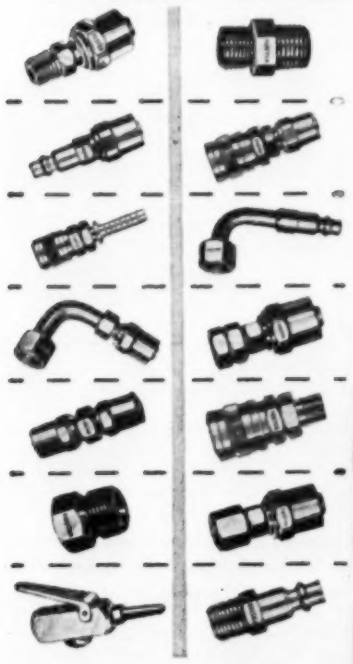
Price...Lower than most
Quality...None Better
Delivery...Immediate

Foster Quick Detachable Couplers for pneumatic and hydraulic applications give longer service and cost less than other comparable couplers. Delivery of any order, large or small, is immediate. An order to Foster is faster. Write Dept. 3.

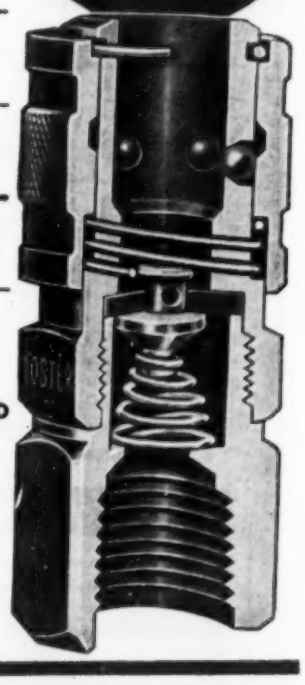


FOSTER MFG. COMPANY, INC.
2850 Gravois • St. Louis 18, Mo.

FOSTER FITTINGS ARE AVAILABLE THROUGHOUT THE NATION



Send for *Free* CATALOG

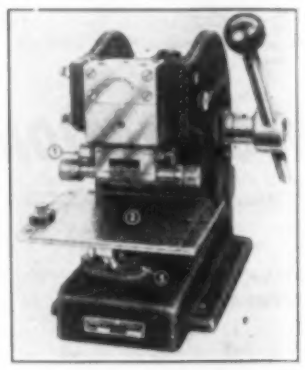


ASK US WHY WE RECOMMEND

If you write maker identify as IEN - 13467

NUMBERING . . Hand operated press takes head with characters to ⅛ in.

Source: **NUMBERALL STAMP & TOOL CO.**
371 Huguenot Park, Staten Island 12, N. Y.



Can be motorized

Model 136 is a new hand operated press designed for use with the company's Model 83 steel numbering head. Press and head are suited for selective numbering of name plates and of small flat products made of brass, aluminum, plastic. In addition to operation with the numbering head, the press can be employed with holders taking interchangeable steel characters or special dies.

The hand lever operates a cam that acts on the ram to make an impression. A knurled nut is turned beneath the table to set the desired impression depth. Clearance between ram and table, with the adjustment down, is 3½ inches. The table has 2 in. of vertical adjustment. Throat dimension is 2½ inches. Overall dimensions are 9½ by 12½ by 11½ inches. Weight is 65 pounds. List price, without the head and adjustable table, is $210.

If you write maker identify as IEN - 13468

FLOORS . . Sponge rubber runner in 36 in. width and 25 yd. length

Source: **FREMONT RUBBER CO.**
348-52 McPherson, Fremont, Ohio

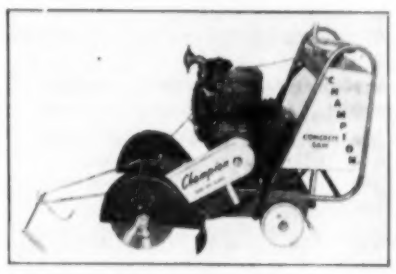
Your feet ride easy

Plastic surfacing on this new sponge rubber aisle runner makes it easy to clean. The resilient material is comfortable to walk upon and completely quiet. The vinyl plastic covering will stand up for several years of service. Four marbleized colors include dark green, brown, red and gray.

If you write maker identify as IEN - 13469

CUTTING . . Engine driven machine operates diamond blade to cut masonry

Source: **CHAMPION MFG. CO.**
2026 Washington Ave., St. Louis 3, Mo.

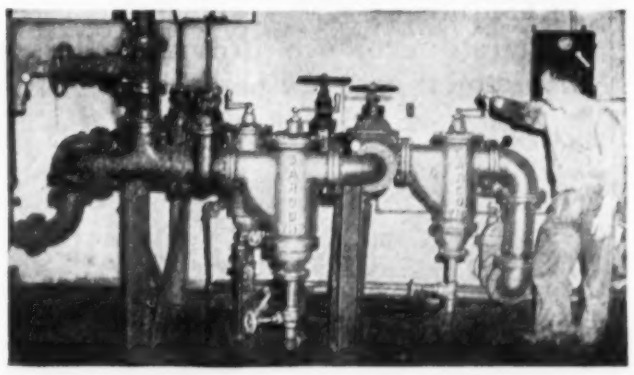


Also cuts asphalt

Type CS-400 with blade capacity to 12 in. and Type CS-500, for a 14 in. blade, are new assemblies in the company's line of masonry cutting machines. Drive is by an 8½-hp. air cooled gasoline engine in one case and by a 14½-hp. engine, also air cooled, in the second. The blade mounts on either end of its shaft. Two blade guards are provided. Feed into and out of the cut is by a screw and hand wheel in front of the operator.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13470



Strainer Screens
kept clean automatically

Unless the screens of pipeline strainers are frequently cleaned, they eventually clog. The production time lost by the shutdown to remove and clean the choked screen, and the labor involved, can be saved by installing Sarco Scraper Strainers, as illustrated. A few turns of the handle scrape the inside of the screen clean and assure continuous operation.

Our photo was taken at Monroe Paper Products Co., Detroit, where three 6" Sarco type VRS scraper strainers take care of river water.

For full information write for Bulletin 1225-4 to *Sarco Company, Inc., Empire State Bldg., New York 1, N. Y.*

Advt. 617

If you write maker identify as IEN - 13471

New MERCURY "TUG" ELECTRIC TRACTOR

Available in Two Capacities: 2000 and 2500 lbs. DBP.

Model 550

The compact, versatile, new MERCURY "Tug" electric tractor. Features *automotive type steering* ...4-speed magnetic contactor control with timed acceleration and controlled plugging . . . new type double reduction drive with demountable wheel rim and tire assemblies . . . self-energizing hydraulic brakes and new type semi-elliptic spring suspension. Available in twin-3 wheel, or 4 wheel model with wide front tread.

MERCURY
FORK TRUCKS · TRACTORS · TRAILERS

For complete information write:

MERCURY MANUFACTURING COMPANY
4132 S. Halsted St., Chicago

If you write maker identify as IEN - 13472

If you write maker identify as IEN - 13473

...for the assembly line!

Completely welded, machined, heat-treated and tested—this Hackney Deep Drawn Part is ready for the manufacturer's final assembly line.

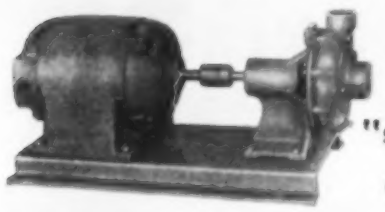
Figure the economy of *ready-to-use* Hackney component parts for your products. And remember that strong, lightweight Hackney Deep Drawn Shapes, Shells and Pressure Reservoirs can be designed in many shapes and sizes—in capacities from 1 quart to 150 gallons. For further information, write today.

Hackney PRESSED STEEL TANK COMPANY
Manufacturer of Hackney Products

1449 S. 66th St., Milwaukee 14 • 1322 Vanderbilt Concourse Bldg., New York 17 • 253 Hanna Bldg., Cleveland 15 • 936 W. Peachtree St., N. W., Room 135, Atlanta 3 • 208 S. LaSalle St., Room 786, Chicago 4 • 577 Roosevelt Bldg., Los Angeles 17 • 18 W. 43rd St., Room 23, Kansas City 11, Mo.

CONTAINERS FOR GASES, LIQUIDS AND SOLIDS

If you write maker identify as **IEN - 13474**



New Goulds "support head" centrifugal pump

Goulds Fig. 3742—Sizes 1" and 1¼". Capacities to 110 G. P. M. Heads to 120 ft.

for AIR CONDITIONING installation

This compact Goulds pump saves space, cuts costs. It's designed especially for air conditioning installations, but also offers advantages for other services.

FLEXIBLE—Discharge may be located in any one of eight positions. May be driven by belt or directly connected to motor or other driver.

COMPACT—You can fit this pump unit into virtually any layout.

QUIET—Balanced impeller assures minimum noise and wear.

SIMPLE—Mechanical seal prevents leakage, but does not bind shaft or require adjustment or periodic maintenance. Vertically split casing permits inspection without disturbing piping connection.

For full details, specifications, performance curves, send for Bulletin 625 A3.

Goulds PUMPS INC.
Seneca Falls New York

If you write maker identify as **IEN - 13475**

You Can Take the Word of 50,000 Firms

That SPEED SWEEP Floor Brushes Sweep Cleaner, Faster and Outlast Ordinary Brushes

Unique in design and construction, Speed Sweep so far outperforms and outlasts other floor brushes that over half of the nation's top rated firms use Speed Sweep under widely diversified sweeping conditions. We know Speed Sweep can do a better job for you, too. In fact, we guarantee it. We invite a trial order on that basis. Write for complete facts, including styles, sizes and prices today.

MILWAUKEE DUSTLESS BRUSH CO.
530 N. 22 STREET, MILWAUKEE 3, WISCONSIN

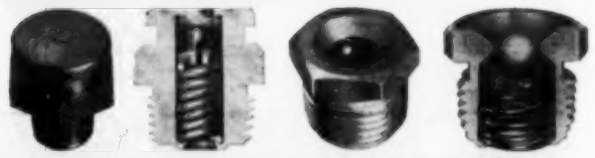
If you write maker identify as **IEN - 13476**

There's All the Difference in the World in Grease Fittings!

UNIVERSAL

Specify UNIVERSAL'S

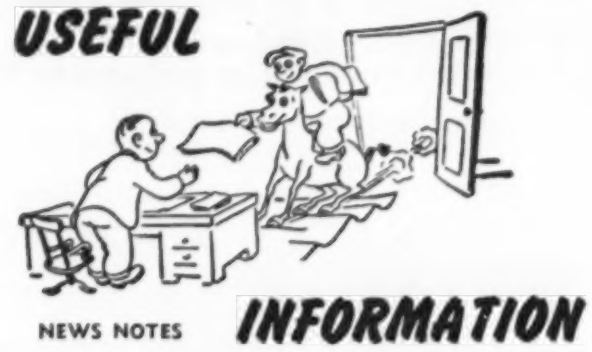
New Giant Button Head or Flush Type Fittings



Streamlined One-Piece Design | **Giant Button-Head Fitting, Plug Check** | **Streamlined One-piece Design** | **Giant Flush-Type Fitting, Ball Check**

Note the practically indestructible one-piece construction, streamline design, positive seating of ball or plug check. Special spring design assures maximum clearance for free passage of grease. For a really modern, improved grease fitting, specify UNIVERSAL. Application engineering available promptly on request. Write now for complete information.

UNIVERSAL LUBRICATING SYSTEMS, INC.
785 ALLEGHENY AVE., OAKMONT, PA.



If you write maker identify as **IEN - 13477**

ABRASIVES . . Booklet on silicon carbide tells about properties, forms, manufacture, uses

Carborundum Co.
1942 Buffalo Ave., Niagara Falls, N. Y.

Information book, "Facts about Silicon Carbide", is a 52-page typewritten report that starts with the discovery of the material in 1891. It describes its manufacture in the electric furnace, physical and chemical properties, grain preparation, applications as loose grain, grinding compounds, coated abrasives, bonded abrasives, refractories, non-slip products, resistors, metallurgical deoxidizer.

If you write maker identify as **IEN - 13478**

ALUMINUM . . Experience of 64 years in making aluminum strip is summarized in booklet

Scoville Mfg. Co.
101 Mill St., Waterbury 20, Conn.

Back in 1889 the company was working with aluminum to roll it into strip mill products. Now it has set up a new cold-rolling strip mill to produce a controlled-quality uniform strip with a minimum of orange-peel effect and earing. Production steps, properties, gauges and weights are given in 24-page catalog, "Truspec", with a method of determining directional properties of the strip.

If you write maker identify as **IEN - 13479**

ELECTRIC CABLE . . Wall chart summarizes code changes on electric wire and cable

Triangle Conduit & Cable Co.
10 Codwise Ave., Dept. 20, New Brunswick, N. J.

Reference chart of presently-approved wire and cable insulation appears on the front of new 18 by 24-in. wall card, "1953 Code Changes". It tabulates types, temperature ranges, uses. The back employs short paragraphs to describe other code changes for wire, cable and conduit.

If you write maker identify as **IEN - 13480**

BLAST CLEANING . . What it will do, where to use it are described in 36-page bulletin

Pangborn Corporation
230 Pangborn Blvd., Hagerstown, Md.

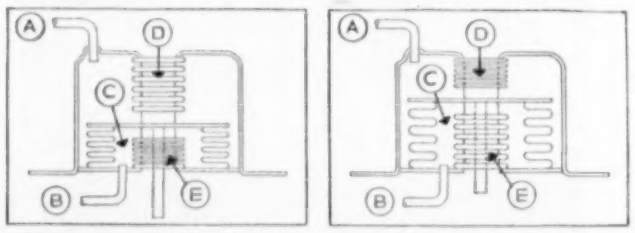
Non-technical review on the possibilities of blast cleaning is presented by new Bulletin 1500, "Blast Cleaning", written by Victor F. Stine, company's Vice President. It tells where blast cleaning is used, why it is used, how it is used, eight types of cleaning, air and centrifugal machines, abrasives, an application list, and a glossary of terms employed.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 13481**

A PAID NEWS ADVERTISEMENT BY CLIFFORD MFG. CO.

PRESSURE CONTROL of differential or absolute pressure provided by new differential pressure bellows assembly.



Pressure greater at inlet (A) compresses large bellows, thrusts actuating rod downward.

Pressure greater at inlet (B) extends large bellows, draws actuating rod upward.

The Clifford Differential Bellows Assembly consists of large operating bellows (C) and two smaller sealing bellows (D), (E). Pressure may be applied either inside or outside (C). Movement of the actuating rod is then proportional to the *difference* between inside and outside pressures. Either side of (C) may also be evacuated and sealed. Movement of the rod is then a function of absolute pressure. Rod can actuate switches, valves, etc., to control an indicated differential or absolute pressure.

The new unit is adaptable to all types of processes where pressure within a fluid system must be automatically equalized, or where absolute rather than gauge pressure must be maintained as in aircraft fuel systems, for example. Assemblies are made of brass, stainless steel, monel and other suitable bellows materials.

Clifford is glad to answer your questions or provide "bellows-engineering" help.

Write for bulletin: "*What To Consider When Selecting A Metallic Bellows.*"

CLIFFORD MANUFACTURING COMPANY
146 Grove St., Waltham 54, Mass.
Division of Standard-Thomson Corporation

If you write maker identify as **IEN - 13482**

COMPRESSED AIR AND GAS COME OUT OF THE LOGAN

ARIDIFIER

Scrubbed CLEAN AND DRY

INSTALL ARIDIFIERS ON LINES SERVING

- Paint Spray Guns
- Air Tools
- Air Hoists
- Foundry Jolting Machines
- Sand Blasting Tools
- Sand Blasting Rooms
- Metal Spray Guns . . . or Wherever the line must deliver clean, dry air or gas

On any air or gas line 92% of the dirt, oil, scale and water that enter the Aridifier is trapped and removed from circulation. The Aridifier's patented centrifugal-baffle action scrubs air and gas clean and dry . . . protects equipment, prevents freezing, fouling, corrosion and caking, produces best results with spray gun and air tool operations, etc. Easy to install. Self cleaning. Maintains itself. 10 models available. Capacity 7 CFM to 17,000 CFM.

Learn HOW the Aridifier scrubs with a patented centrifugal-baffle action.

Write for This Catalog Now!

Logan ENGINEERING CO.
4902 W. Lawrence Ave., Chicago 30, Ill.

If you write maker identify as **IEN - 13483**

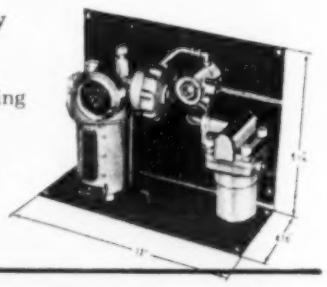
Steel-Maker...
extends bearing life 11 times!

ALEMITE OIL-MIST

Saves its cost each week-
eliminates lubrication down-time

Costly High-Speed Bearings Failed Week after Week on a key production machine. Costs piled up. The company turned to Alemite—installed an Oil-Mist unit costing little more than $100. *Result:* $220 saved first week. Today—11 weeks later—no signs of bearing wear; only three ounces of oil used per shift where a pound and a half of grease were required before!

Alemite Oil-Mist is a fully automatic system which atomizes oil into mist . . . distributes it through tubing to bearings . . . applies a constant uniform oil film to groups of bearings designed either for oil or grease lubrication.



delivers oil to bearings 3 ways

1. Oil-Mist as Such. For any type of anti-friction bearing—ball, roller or needle.

2. Oil in Spray Form. For open and enclosed gears and chains. Nozzle partially condenses mist so that it can be directed onto a concentrated area.

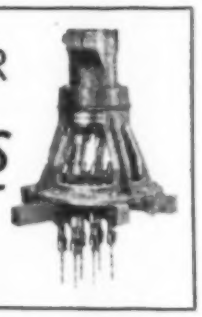
3. Oil-Mist Condensed. For plain bearings, slides, ways, vees, cams and rollers. In these applications, condensing fittings convert oil mist to liquid oil.

Get the facts NOW!

Let us send you the complete story on Oil-Mist. Specifications, models, typical applications, actual case histories. Get yours now. Write Alemite Division of Stewart-Warner, Dept. K-123, 1850 Diversey Parkway, Chicago 14, Illinois.

If you write maker identify as **IEN - 13485**

Yes! THRIFTMASTER makes ALL TYPES of DRILLHEADS



Universal Joint Drillhead . . . Full Ball or Bronze Bearing Construction Standard and Heavy Duty. From ½" Minimum Centers up. Capacities to 1" in Steel.

Gear Driven Electric Type Adjustable Drill Head . . . Enclosed, Full Ball Bearing Construction.

Special Fixed Center Drillhead . . . Full Ball Bearing Construction.

- **We Stock or Can Build the Right Drillhead for Your Job.**
- **Write for THRIFTMASTER Complete Catalog or phone for a rush, on-the-spot, quote.**

Subsidiary of Thomson Industries, Inc.

THRIFTMASTER *Products Corporation*

1040 N. Plum Street LANCASTER, PENNA.

Also makers of

DORMAN AUTOMATIC REVERSE TAPPERS

If you write maker identify as **IEN - 13486**

"TEFLON" SEALING

Exclusively at Graef Engineering Company

Seal maintains all the desirable properties of "TEFLON"

Extreme chemical resistance
High temperature stability
Superior electrical properties
Non-adhesion

Allows fabrication from "TEFLON" film

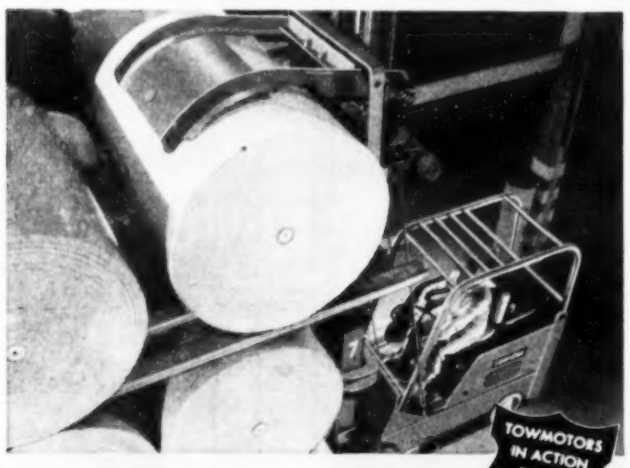
POTENTIAL APPLICATIONS

"TEFLON"	"TEFLON"
bonded to "TEFLON"	bonded to Metal
Bags and Sacks	Valve Discs
Tank Liners	Vat Liners
Containers	Capacitors
Protective Clothing	Protective Coatings
	Heat Sealers

Write us for full details.

GRAEF ENGINEERING COMPANY
P. O. Box 416, Clearwater Station
Paramount, California

If you write maker identify as **IEN - 13487**



Towmotor with Revolving Roll Clamp high-stacks 1½-ton roll of paper at Gibraltar Corrugated Paper Co., Inc.

KEEP UPKEEP DOWN Towmotor loads and unloads up to four times faster . . . speeds production . . . often doubles storage space—all with greater net savings, because Towmotor keeps upkeep down by handling more tons per dollar. You'll welcome TowmoTorque, the drive that eliminates shifting. And Power Steering, that does 80% of the work. And the new "Cushioned Power" Diesels that give new power and economy. Plus many other features that keep upkeep down. Send today for book on TowmoTorque and Power Steering. TOWMOTOR CORPORATION, Div. 2612, 1226 East 152nd St., Cleveland 10, O.

TOWMOTOR THE ONE-MAN-GANG

FORK LIFT TRUCKS and TRACTORS
Since 1919

TOWMOTOR ENGINEERED FOR QUALITY PERFORMANCE

USEFUL INFORMATION

(Continued)

If you write maker identify as **IEN - 13488**

CONVERSION CHART . . For temperature, Fahrenheit to Centigrade, also altitude vs. pressure

Conrad Incorporated
50-54 W. 4th St., Holland, Mich.

Remove the paper backing from new 3 by 9¼-in. Conversion Chart and you can stick it on a desk slide, wall or other surface by means of its pressure-sensitive adhesive. It has three sets of conversion tables, one for equivalent Centigrade degrees for Fahrenheit degrees from 60 to 212, the second for Centigrade for Fahrenheit from minus 150 to plus 60, and the third for altitude to 50,000 ft. with equivalent inches of mercury.

If you write maker identify as **IEN - 13489**

FLOORS . . Bulletin gives instructions on how to employ oil absorbent material on floors

Oil-Dri Corporation
518-22 N. Michigan Ave., Chicago 11, Ill.

Application instructions have been compiled on company's Oil-Dri oil and grease absorbent and are offered on request as 7-sheet typewritten manual, "How to Solve Oily Floor Problems". It describes how to use the material to absorb occasional spills, continual spill or spray of liquids, floor accumulations, its use on waxes, paints and quick-drying viscous liquids, suggestions on tools for spreading and removal.

If you write maker identify as **IEN - 13490**

FLOORS . . Why floors deteriorate is described in 24-page booklet with notes on remedies

Tremco Mfg. Co.
8703 Kinsman Road, Cleveland 4, Ohio

"Floors and Floor Problems" is based on the company's experience in the field. It presents drawings and descriptions on floor construction for wood, wood block, concrete, asphalt, linoleum. It tells why these floors deteriorate. It notes advantages and disadvantages. It also notes points to consider in floor maintenance, concludes with an offer of assistance.

If you write maker identify as **IEN - 13491**

FURNITURE . . Three-dimensional models to assist in layout of metal laboratory furniture

Labline Inc.
215-19 N. Desplaines St., Chicago 6, Ill.

"Laboratory Layout Kit" consists of 26 scale-size cardboard three-dimensional models, a set of ruled layout sheets scaled ½ inch to the foot, and a copy of the company's 28-page Catalog F-153. The kit is available to qualified individuals to assist in planning a laboratory layout.

The models are miniature boxes, supplied in knock-down form, that assemble by means of flaps and slots. They are printed in detail to represent base-cabinet drawer units, cupboard units, standard and corner sinks, table and bench units, fume hoods, storage cases, wall cabinets, desks.

Assembled models are placed on the ruled layout sheet, measuring 16½ by 10½ in., and arranged until the desired combination of cabinets and equipment has been achieved. The catalog gives details on each piece of furniture and presents suggestions on planning. Once the desired combination has been secured, the models can be adhered into position.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 13492**

PRECISION INTERNAL FORMING with a

MAXWELL RECESS-O-MATIC

Fast set-up . . . repetitive accuracy . . . maximum capacity and throw . . . these features make the **RECESS-O-MATIC** tool superior for precision internal forming operations. Designed especially for use on multiple-spindle automatics, this tool can be attached quickly without need for special cams.

The **RECESS-O-MATIC** is available in three sizes hav- Recessing stroke ranges from ¼ to ½-inch. ing maximum capacities of 2, 3 and 4 inches.

Write for catalog. (Model DB)

894-MC

THE MAXWELL COMPANY

391 BROADWAY • BEDFORD, OHIO

If you write maker identify as **IEN - 13493**

NEW...LIGHTWEIGHT...NON-CORROSIVE

UDYLITE LAMINEX TANKS

Udylite Laminex tanks of molded fiberglass have many of the advantages of aluminum or stainless steel yet cost less.

In addition to this important low initial cost, Udylite Laminex tanks have these unique features—

- Non-corrosive inside and out. They're easy to clean, too.
- Electrically non-conductive.
- Extremely lightweight. A 2'x2'x3' tank weighs only 60 lbs!
- If accidentally damaged, can be quickly and easily repaired, in place.
- Capacities are from 25 to over 500 gallons, and depths up to six feet are available.

For full information on prices and sizes, call your Udylite Technical Man or write direct.
THE UDYLITE CORPORATION DETROIT 11, MICHIGAN

THE *Udylite* CORPORATION

If you write maker identify as **IEN - 13494**

THEY GRIND--NOT JUST RUB!

The RPM's stay up while grinding . . . not only when the grinder runs idle.

It is an established fact that surface speeds must stay up to approximately a mile a minute if you want to grind . . . not just rub. Every mechanic knows this, but an inexperienced buyer may order tools that maintain proper grinding speeds only when running idle. The speed of Kipp air grinders drops but slightly when put to work. That means better work . . . longer wheel life.

MADISON-KIPP CORP.
224 Waubesa St., Madison, Wis., U.S.A.

Write for KIPP Air Tool Catalog AT 3006

If you write maker identify as **IEN - 13495**

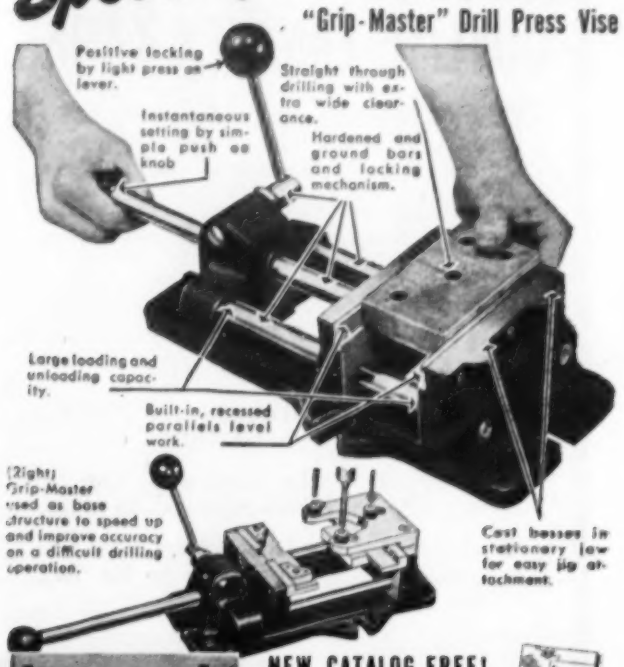
A Platecoil has more heat transfer area than a pipe coil twice its size. Thus it takes only half as much Platecoil to heat a given area. You have 50% less steel to pay for so you can save nearly 50% in initial cost. The Platecoil takes only half as much space in the tank. The greater BTU transfer per unit area of Platecoil also means faster heating or cooling. Platecoils require less maintenance and can be removed without dumping the solution.

Send for complete technical manual and descriptive Bulletin No. P56

PLATECOIL Division **Tranter Mfg. Inc.** LANSING 4, MICHIGAN

If you write maker identify as IEN - 13496

Speed-up OPERATIONS with heinrich "Grip-Master" Drill Press Vise



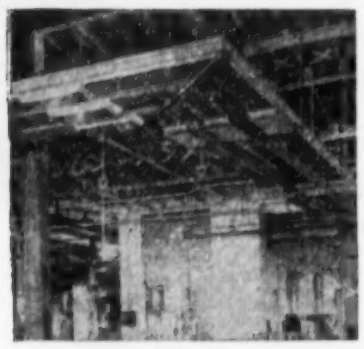
heinrich TOOLS, INC.

NEW CATALOG FREE!
Be sure you have a complete Heinrich Tool Catalog in your files. Your copy will be sent free upon request.

DEPT. 173-M • RACINE, WIS.
Drill Press Vises • Fixture Locks • Nibblers
Punches • Rod Cutters

If you write maker identify as IEN - 13497

Major CHANGES MADE Minor WITH
Trumbull Flex-A-Power® Busways



Plant expansion, or rearrangement of production machines, becomes a simple matter when a Flex-A-Power electrical distribution system is installed. Machines plug in almost as easily as your toaster. New sections can be added quickly and inexpensively. An entire system can be dismantled and reinstalled with almost 100 per cent reuse of material.

Available in these types:

* **Type LVD Feeder Busway,** 600-4000 amps, 2-, 3- and 4-pole, to 600 v.
* **Type FVK Plug-In Busway,** 225-1000 amps, 2- and 3-pole and 3 phase 4 wire, to 600 v.

Type LTG Plug-In and Trolley Busway, 50 amps, 2-, 3- and 4-pole, 300 v., AC or DC.

Type TK Heavy Duty Trolley Busway, 100, 200 and 400 amps, 2- and 3-pole, to 600 v.

* *With copper or aluminum busbars.*

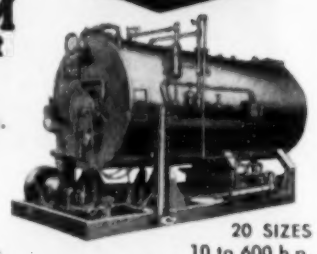
GENERAL ELECTRIC
DISTRIBUTION ASSEMBLIES DEPARTMENT
PLAINVILLE, CONN.

If you write maker identify as IEN - 13498

1. SET IT ON YOUR CONCRETE FLOOR
2. MAKE SERVICE CONNECTIONS
3. TURN ON THE STEAM!

You Never Saw a UNIT So Easy to INSTALL and OPERATE!

AMESTEAM GENERATOR



- is fully piped and wired.
- needs no special foundation.
- is factory insulated and jacketed.
- has its own refractories.
- needs no heavy, costly stack.

20 SIZES
10 to 600 h.p.
15 to 200# OIL OR GAS

WRITE FOR FREE BULLETIN TODAY!

AMES IRON WORKS
BOX F-128
OSWEGO, N. Y.

AMES IRON WORKS
Box F-128, OSWEGO, N. Y.
Gentlemen:
Please send me further information on AMESTEAM GENERATORS and name of the nearest representative.
NAME.....
COMPANY.....
ADDRESS.....

USEFUL INFORMATION
(Continued)

If you write maker identify as IEN - 13499

ABRASIVE CUTTING . . How to select wheels is one of several topics in new instruction manual

Norton Company
36 New Bond St., Worcester 6, Mass.

Revised 36-page edition of "Norton Cut-Off Wheels" describes reasons for using abrasive cut-off wheels, types available, how to select a wheel by application, general recommendations on use, suggestions on maintenance. A chart lists wheels to use on products from Alnico to wallboard.

If you write maker identify as IEN - 13500

GAGES . . Textbook on measurement describes gage blocks, optical flats, comparators

DoAll Company
252 N. Laurel Ave., Dept. IEN, Des Plaines, Ill.

New 264-page book, "Science of Precision Measurement", emphasizes the distinction between clearance and tolerance at the start. It then tells about gage blocks and their uses, how to construct holders, angle measurement by sine bars, use of light waves in measurement, comparative measurement with electrical and mechanical comparators, thread wires. List price is $3.50.

If you write maker identify as IEN - 13501

HEATING . . How to test unit heaters for capacity ratings is described in standard code

Industrial Unit Heaters Association
2159-A Guardian Bldg., Detroit 26, Mich.

Up-to-date instrumentation and practices are included in new Second Edition of the Standard Code for testing and rating hot-water unit heaters. Drawings and text describe equipment and methods, computations are noted, blank forms are provided. Ask for 20-page Bulletin 11.

If you write maker identify as IEN - 13502

INSULATING . . How to design parts for machining from Mycalex glass-bonded mica

Mycalex Corporation
123-27 Clifton Blvd., Clifton, N. J.

Instruction booklet of 24 pages tells what points to watch for when designing parts of the company's glass-bonded mica. It is titled, "From One Designer to Another," tells about flat sheet as a starting point for all available sizes and shapes, stock sizes, inserts, cements, design tolerances for machining, preferred practice on holes, threads, slots, notches, corners.

If you write maker identify as IEN - 13503

LIGHTING . . New application is described for luminous ceiling as a means of air distribution

Luminous Ceilings Inc.
2502 W. North Ave., Dept. IEN, Chicago 47, Ill.

How to utilize the space above the company's Acusti-Luminus ceiling as an air plenum chamber is the subject of new 16-page "Design Data" bulletin. The construction consists of fluorescent lighting fixtures located above corrugated translucent plastic sheets. Air introduced above the ceiling passes around the plastic sheets uniformly to enter the room. The bulletin shows how to go about it.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13504

MYSTIK BRAND
• SELF-STIK

New!

Flexstron
Trademark 6220

"Tarzan of the Tapes"
cuts packaging costs . . . speeds operations!

Flexible as ribbon . . . Strong as wire! A tough, rubber-fibrous, high tensile filament reinforced tape for heavy duty packaging and packing jobs—strapping, bundling, binding, reinforcing, palletizing. Safe to handle—needs no special equipment—grips instantly—conforms to all shapes—will not cut into cartons. Write for full information and free sample. Mystik Adhesive Products, 2644 North Kildare Ave., Chicago 39.

T. M. Mystik Registered © 1953 Mystik Adhesive Products

If you write maker identify as IEN - 13505

Variable Speed Control for Light Machinery

Costs only a trifle — brings amazing results

Converts a constant speed motor to a variable speed drive . . . fits on standard motor shaft. Provides accurate, positive speed changes while the machine is running. With a turn of handwheel, you get exactly the right speed for every job under every changing condition. Sizes from ⅛ to 1½ hp—$7.50 and up. Write for Bulletin IN 66d-G.

Reeves Pulley Company • Columbus, Ind.
REEVES *Variable Speed Control*

If you write maker identify as IEN - 13506

Safety for Overhead Jobs
HI-REACH
PLATFORM TELESCOPER
Model PUL

THREE STANDARD MODELS

No. 1—Platform lift 10'9"	$305.00
No. 2—Platform lift 11'9"	315.00
No. 3—Platform lift 15'0"	340.00

Equipped with 5" diameter base wheels
Rubber-tired wheels $8.00 extra
F.O.B. Chicago
Other models with platform lift up to 95'
Write for complete specifications.

ECONOMY ENGINEERING COMPANY
4502 West Lake Street, Chicago 24, Illinois

If you write maker identify as IEN - 13508

WHEN IT COMES TO **GASKETS...**
LET **MELRATH** "CARRY THE BALL"

ALL-AMERICAN TRIPLE THREAT
1. FULL STOCKS
2. FRIENDLY SERVICE
3. FAST DELIVERY

. . . Specializing in Gaskets for Condensers, Heat Exchangers, and Cylinder Heads.
. . . Manufacturers of Gaskets for Every Use—with insurance of quality, safety, economy and satisfaction.
Write today for Catalog 47, describing gaskets of all types, sizes and materials.
(Manufacturers also of Sheet Packings and Metal Stampings.)

MS—905

MELRATH SUPPLY & GASKET COMPANY, INC.
Tioga Street and Aramingo Avenue • Philadelphia 34, Pa.

If you write maker identify as IEN - 13509

nothing succeeds like...

PROMPT SHIPMENT
from 500,000,000 screws in bulk 300,000 gross packaged stock.

FREE LUBRICATION
Screws in bulk lubricated free upon request.

SECURE PACKING
in containers specially built and sealed against loss in shipment.

Southern means one source for all your wood screw needs — and Quality in every screw!

PHILLIPS or SLOTTED • FLAT • ROUND • OVAL
STEEL • BRASS • SILICON BRONZE • ALUMINUM

SOUTHERN SCREW COMPANY
STATESVILLE, N. C. • MANUFACTURER OF WOOD SCREWS
Factory Warehouses:
North Bergen, N. J. • Chicago 10, Ill. • Los Angeles 23, Calif.

If you write maker identify as IEN - 13510

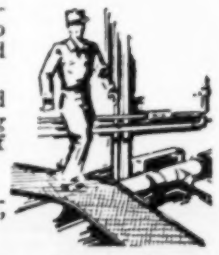
SOLVE ALL YOUR SKIDDING & SLIPPING PROBLEMS

with **Bustin** FIRM-GRIP
SAFETY GRATING

Bustin FIRM-GRIP* grating guarantees safe, comfortable walking under the most adverse conditions where grease, oil or water can cause accidents from slipping.

FIRM-GRIP is acclaimed by Safety Engineers of major industrial concerns for its exceptional traction quality and other safety features due to the unique assembly and engineered spacing of the contact points.

Made in various designs and sizes and adaptable for installation on skidding problem spots where other makes of gratings cannot be considered.



"Bustin — Designers and Manufacturers of Metal Products Since 1928"

Bustin FIRM-GRIP GRATING CORP.
Dover, New Jersey

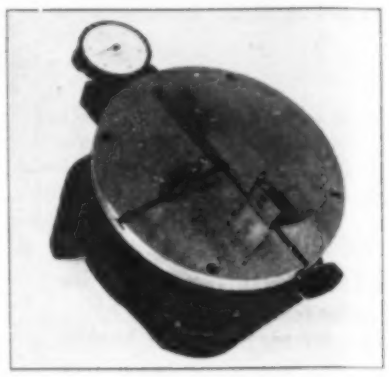
*Pat. Pending

Send for Complete Literature

If you write maker identify as IEN - 13511

GAGE . . Comparator checks circular work against master

Source: MYER CORPORATION
631-Park Ave., Cranston, R. I.



Patents pending

Model K7-R is a new precision comparator that employs a dial indicator to read plus or minus a master setting on circular internal and external measurements. It can be set up for internal work from 7/16 to 7 in. in diameter and for external work from 1/8 to 7 inches. A fine adjustment range is maximum at 0.040 inch. The jaws shown in the illustration are adjustable for height of measurement to a maximum of 1/4 inch. Other special jaws for given work are subject to order.

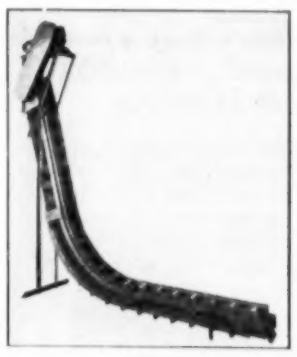
Two of the three work locating jaws are stationary. The third one connects to the indicator and is operated against adjustable pressure by means of a lever at the front of the housing. Construction includes a surface ground top plate that forms a bridge over the heavy precision machined cast iron base.

List price for the Type K7-R gage alone is $305. A set of jaws made of hardened tool steel adds $75. Jaws with tungsten carbide contacts and pins add $140. The indicator adds $23.50 to $26.50 with graduations ranging from 0.001 to 0.0005 inch plus and minus the zero setting.

If you write maker identify as IEN - 13512

CONVEYING . . Metal mesh belt unit to handle hot or cold metal products

Source: R. T. SHEEHAN COMPANY
8068-72 N. Territorial Road, Plymouth, Mich.



Built to order

New design of the company's line of stationary and portable metal mesh conveyors, previously described IEN-7696-51, now includes a new foot assembly in which the belt stands 6½ rather than 8 in. above the floor line to reach into low clearances under presses and other production machines.

Drive is by a geared head motor connecting to the head shaft on which is mounted a pulley that meshes positively with the belt. There is no chance for slippage and no need for adjustment to remove slack due to heat expansion when the conveyor is used to handle hot work. The mesh permits oil and coolants to pass through so the work is drained by the time it reaches the head end.

Each conveyor is built to meet specified requirements. In the unit illustrated the belt is equipped with cleats on 2-ft. centers and the conveyor has a load capacity of 25 lb. to the running foot. Four standard widths are 8 to 20 inches. Normal operating speed is about 30 feet per minute.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13513

FREE!
BOOKLET AND SAMPLES

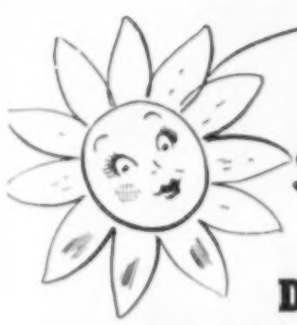
LEARN HOW
SHAKEPROOF®
Plasti-Rivets
CUT ASSEMBLY COSTS!

These ingenious new plastic fastenings drive from one side—simplify blind fastening problems—resist vibration loosening and corrosion. Available in a wide variety of thermo-plastic materials, in a wide choice of colors, sizes and standard or special types.

Send for FREE Testing Samples to-day!

SHAKEPROOF
"Fastening Headquarters"
DIVISION OF ILLINOIS TOOL WORKS
St. Charles Road, Elgin, Illinois
Offices in principal cities

If you write maker identify as IEN - 13514



BE FRESH... STAY FRESH

wear a
DUPOR No. 24
THE RESPIRATOR THAT IS U.S.B. OF M. APPROVED FOR TYPE "A" DUSTS

More than 24 sq. in. twin filter area. Sanitary face cloth. Soft rubber face mask. Has all patented DUPOR features including bulb valve controlled breathing—panorama view with no blind spots. A favorite for years!

Sample sent $3.00 *pp*

H. S. COVER
South Bend, Ind.

If you write maker identify as IEN - 13515

FOR MATERIAL HANDLING—
more and more—the swing is to wide-base pneumatic tires

GENERAL
INDUSTRIAL PNEUMATIC TIRES

More Designers are specifying wide-base General Pneumatics. They know Generals add these extra selling points to handling equipment.

SAVE TIME • MONEY • LABOR

- MORE LOAD CAPACITY AT LOW OR HIGH SPEEDS
- CUSHION EQUIPMENT AND LOADS REDUCING BREAKAGE AND SPILLAGE
- SAVE HIGH COST FLOORS AND FLOOR SURFACES
- SLOW, EVEN WEAR FOR LONG SERVICE
- HIGH FLOTATION FOR EASIER ROLLING OVER SOFT GROUND
- ROLLS EASIER, SMOOTHER OVER ALL SURFACES

Available separately or in assemblies of Tires, Tubes and Wheels. Size O.D. 8" to 27"—200 to 4000 lbs. cap. for low or high speeds.

THE GENERAL TIRE

Rigid **CASTER FORKS** *Swivel*

Wide-base caster forks engineered to carry heavier loads without adding dead weight to equipment. Available in identical pairs in a wide range of sizes.

SEND FOR CATALOG . . . DEPT. 6

THE GENERAL TIRE & RUBBER CO. AKRON, O.

If you write maker identify as **IEN - 13517**

If you write maker identify as **IEN - 13518**

Performance records prove.....

HOMESTEAD VALVES...are a "Better Buy"

A pottery* in Ohio tried practically every type of valve on its "slip" lines, but the highly abrasive material, at 125 pounds pressure, ruined the average valve in a few months—in some cases, in a few weeks. Our engineers recommended HOMESTEAD Cam-Seald VALVES with special, hard-faced plugs and bodies. The pottery installed them on all "slip" lines in the plant.

Performance records kept during the past several years show that the HOMESTEADS are lasting more than three times longer than any other valve previously used. Savings in replacement and maintenance costs repay many times over the first cost of the HOMESTEADS.

For more than 60 years HOMESTEAD VALVES have been licking equally tough jobs on scores of services in many different types of industries. Chances are there's a valve problem they can solve for you. Why not ask our engineers about it? No obligation.

*Name on request.

Write today for VALVE REFERENCE BOOK No. 39

HOMESTEAD
VALVE MANUFACTURING COMPANY
"Serving Since 1892"
P. O. Box 85 • Coraopolis, Pa.

If you write maker identify as **IEN - 13519**

MACHINERY MFR. CUTS PRODUCTION TIME 50%

Using Slo-Speeds on cold metal processing equipment we manufacture, we show savings of approximately 50% in construction costs, reports Mr. George H. Slagle, owner, Slagle Beryllium Co., Havertown, Pa. ...and our customers gain an important economic advantage through lower equipment costs.

STERLING SLO-SPEED GIVES YOU THE ONE BEST LOW SPEED AND gives uninterrupted service — carries heavy overhung loads — provides versatile mounting and flexibility in arrangement of machinery — saves valuable space — provides greater safety — costs less to install and use. An indispensable source of low speed power for:

Agitators	Dryers	Presses
Blenders	Feeders	Pumps
Blowers	Kilns	Screens
Conveyors	Mills	Tumblers
Cookers	Mixers	Etc., etc.

70 ILLUSTRATIONS showing how Sterling Electric Power Drives reduce production costs. Write for Bulletin No. C-422.

STERLING ELECTRIC MOTORS

Plants: New York City 51; Chicago, Ill.; Los Angeles 22; Hamilton, Canada; Santiago Chile • Offices and distributors in all principal cities.

USEFUL INFORMATION

(Continued)

If you write maker identify as **IEN - 13520**

MAGNETS . . Design suggestions are included in 6-page report on Alnico material

Carboloy
11167 E. 8-Mile Road, Detroit 32, Mich.

Sintered Alnico Grade 5 is the subject of Technical Report PM-111, available on request. The report covers development, manufacture, applications, magnetic and physical properties, tolerances, a set of 5 design suggestions, and an offer of engineering service.

If you write maker identify as **IEN - 13521**

METALS . . Manufacturing methods for producing clad metals are shown in new booklet

Superior Steel Corp.
Superior Ave., Dept. IEN, Carnegie, Pa.

W. L. Keene, company's Director of Research, is author of new 28-page pocket booklet, "An Introduction to Clad Metals". The booklet reviews problems involved in bonding two metals together, characteristics and troubles encountered with clad metals, drawings and descriptions on five principal methods. There is a list of 277 U. S. patents dealing with clad metals.

If you write maker identify as **IEN - 13522**

METAL PRODUCTS . . What the company makes in its seven divisions is shown by 88-page picture book

Continental Copper & Steel Industries
345 Madison Ave., Dept. IEN, New York 17, N. Y.

Alloy steel to lifeboats is the scope of products made by the company's manufacturing divisions. They are illustrated in 88-page book, "Metal at Work", along with descriptions on equipment and methods employed. These processes include alloy fabricating, wire cloth, electric wire and cable, alloys and alloy steels, fabricated steel products, lifeboats and davits.

If you write maker identify as **IEN - 13523**

METAL SPRAYING . . Molybdenum is used to produce a wear-resistant surface or bonding coat

Metallizing Engineering Co.
38-16 30th St., Long Island City 1, N. Y.

Molybdenum in wire form was introduced originally about four years ago to serve as a bonding coat for other metal-spraying operations. Its application has widened to the point where now it is recommended for wearing surfaces, particularly in contact with bronze, and for resisting abrasive wear where shock is not involved. Bulletin 57-C, 4 pages, quotes 15 specific examples.

If you write maker identify as **IEN - 13524**

NAME PLATES . . Selection suggestions on design, materials, fastening of metal nameplates

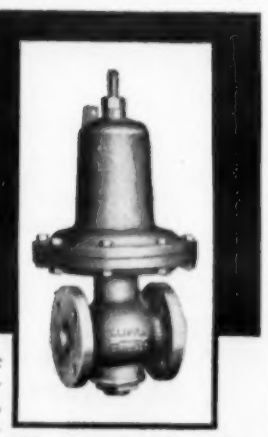
L. F. Grammes & Sons
356-60 Union St., Allentown, Pa.

Five functions performed by a metal nameplate, including the basic one of naming the product, are described in new 12-page booklet, "Tips on Nameplate Design and Selection". Factors in nameplate design, production methods, types of metals that can be employed, methods of fastening, are topics.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 13525**

REDUCING VALVES



No. 700 illustrated — Water pressure reducing 300 lb. initial to 50 lbs. delivery. Spring-diaphragm type for noiseless, dead end service. Large flow passages. Tight closing. Designed for maintenance without removal from line. Compact. Dependable. Other types available. GET BULLETIN 148.

Call Your Supply House or See Classified Phone Directories for Nearest KLIPFEL Agent.

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Colorado Denver	Massachusetts Boston	New Mexico Albuquerque	Pennsylvania Pittsburgh Philadelphia	Wisconsin Milwaukee
Florida Tampa	Michigan Detroit	North Carolina Greensboro	Texas Dallas	Canada Montreal
Georgia Atlanta	Minnesota Minneapolis			

K-941

Klipfel VALVES, INC. HAMILTON, OHIO

If you write maker identify as **IEN - 13526**

Another FLASH-O-LENS at work ...checking pigment dispersion at B. F. Goodrich

The inspection tool that *lights* and *magnifies*—FLASH-O-LENS—is in daily use at The B. F. Goodrich Company in making laboratory checks on the dispersion of pigments in milled rubber stocks.

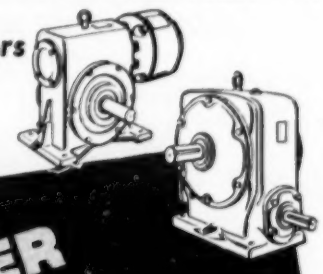
The built-in bulb of a FLASH-O-LENS brightly illuminates the inspection area—the accurately ground lenses give sharp, detailed enlargement. Result: quick, simple inspection!

Battery and plug-in models from $10.65. Write for free literature on applications, types, prices.

E. W. PIKE & COMPANY
492 NORTH AVENUE ELIZABETH 3, N. J.

If you write maker identify as **IEN - 13527**

How cost-wise buyers rate **SPEED REDUCERS**



GOOD
✓ BETTER
BOSTON Gear

REDUCTORS AND RATIOMOTORS

IN STOCK AT 92 BOSTON GEAR DISTRIBUTORS at Factory Prices

Look under "Gears" in the Yellow Classified Section of your Telephone Directory for the one nearest you.

Get the 384-page BOSTON Gear Catalog . . . industry's most valued "textbook" of drive design and maintenance. Ask your BOSTON Gear Distributor, or write Boston Gear Works, 63 Hayward St., Quincy 71, Mass.

If you write maker identify as **IEN - 13528**

Self Spraying **STATIKIL** TRADE MARK

PRESS BUTTON AND SPRAY

For Relief from

STATIC ELECTRICITY

$3.00 PER CAN

For static troubles in your processing operations STATIKIL is the simple, quick, effective and economical relief. Used regularly and in quantity by the largest plants in the nation.

For all paper, textile and plastics operations, spray lightly on feed boards, cylinders, tapes, rollers, drive belts; any places on or near where static may generate. When used directly upon material spray lightly from a distance. Useful in all kinds of situations. Especially effective for synthetic materials.

Sold in cases of one dozen self-spraying 12 ounce cans at $30.00 per case. Sold in regular liquid form at $15.00 per gallon or $4.00 trial quart size. Buy some of the self-spraying cans at $3.00 to prove to yourself that you can increase production with prompt relief from static.

STATIKIL . . . . A division of the J. E. Doyle Company

Just Write **STATIKIL**
1220 W. 6th ST., CLEVELAND 13, OHIO

If you write maker identify as IEN - 13529

assurance that your job keeps going —wherever it is!

Your Hyster Lift Truck won't need service often, but when it does, one of the more than 700 Hyster Dealers throughout the world is within easy servicing distance. HE KNOWS YOUR MATERIALS HANDLING JOBS MUST KEEP GOING! You can depend on your Hyster Dealer to place the *right* industrial truck (1,000 to 30,000-lb. capacity) and attachment on your job...for a continuous, profitable lift truck operation. Call your Hyster Dealer today, or write for Catalog 1277.

HYSTER COMPANY | 2916 N. E. Clackamas, Portland 8, Ore. 1016 Myers Street . . Danville, Illinois

FOUR FACTORIES: Portland, Oregon; Danville, Illinois; Peoria, Illinois; Nijmegen, The Netherlands

If you write maker identify as IEN - 13530

A.C. or D.C. . . . single phase or polyphase . . . induction or synchronous . . . in all ratings and frame types —whatever the need, you can find the one motor best suited to the job in the complete line of Fairbanks-Morse Motors. Call your nearby Fairbanks-Morse electric motor branch for details, or write: Fairbanks, Morse & Co., 600 So. Michigan Ave., Chicago 5, Ill.

FAIRBANKS-MORSE,

a name worth remembering

ELECTRIC MOTORS AND GENERATORS • MAGNETOS • PUMPS
DIESEL LOCOMOTIVES AND DIESEL ENGINES • FARM MACHINERY
SCALES • RAIL CARS • HOME WATER SERVICE EQUIPMENT

If you write maker identify as IEN - 13532

BEARING . . Miniature roller design for use on apparatus, machines, motors

Source: LANDIS & GYR INC.
45 W. 45th St., Dept. IEN, New York 36, N. Y.

Smallest unit full size

Seven sizes, in this new miniature precision roller bearing, range from 0.4724 to 1.0236 in. in outside diameter. Hardened and ground steel rollers ride in a bronze cage between the straight inner and outer races. The rollers are retained by a snap ring on the inner race and by a section of the shield in the outer race. The construction permits elimination of shoulders above either race surface so both can be ground without interference.

Type N employs a press fit outer race and slip fit between the shaft and the inner race so the shaft, inner race and roller cage can be removed as a unit. Type NU employs a press fit inner race so the outer race and the roller cage can be removed. Type NP, illustrated, employs press fit for both the inner and outer races. It and Type N carry removable dust shields. Experimental quantities are available immediately.

If you write maker identify as IEN - 13533

WATER PROOFING . . Liquid to protect masonry, wood, steel

Source: DELRAC CORPORATION
131 Mill St., Watertown, N. Y.

Helps cure concrete

Delrac Coating is a new transparent fluid that penetrates into masonry to seal the porous structure and to produce a hard water proof coating. It seals the pores in steel. It can be used as both a primer and a finish coat. It seals wood to lock the grain and prevent bleeding. Coverage is about 200 sq. ft. per gal. on concrete, masonry, wood.

If you write maker identify as IEN - 13534

STORING . . Steel bin prevents fire in flammable materials

Source: J. D. POLIS MFG. CO.
2910 W. 26th St., Chicago 23, Ill.

Prevents fire

Design that includes either legs or caster and three sizes, with capacity for 1, 2 and 3 bales of excelsior, characterize new construction of the company's steel bin, previously described IEN-11395-49. The cover is held open by a chain equipped with a fusible link. This link melts, in the event of overheating, to permit the cover to close by gravity and thus smother any fire that might start in the bin. The unit meets fire regulations and is Underwriters' approved for materials such as excelsior, straw, shredded paper, rags, waste.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13535

If you write maker identify as IEN - 13536

if you produce precision gears of 6" outside diameter or less your files should certainly contain full data on the HAMILTON® Precision Gear Hobber, the machine of exclusive extras.

EXTRA — Hob spindle speeds.

EXTRA — Hob spindle speed ranges.

EXTRA — Accuracy of work and hob spindles (to within .0002").

EXTRA — Rigidity, for maintenance of accuracy.

EXTRA — *Independent* selection of speed, feed, indexing.

EXTRA — Maximum accumulative error of .0002".

EXTRA — Speedy set-up and operation, extra flexibility.

Get the complete story. Write for FREE Bulletin GH-5312.

THE Hamilton TOOL COMPANY
905 HANOVER STREET • HAMILTON • OHIO • U • S • A

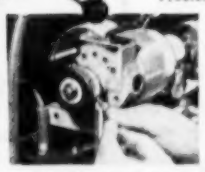
If you write maker identify as IEN - 13537

This new DUMORE® grinder eliminates hand sharpening of small drills

This remarkable new grinder sharpens small twist drills with amazing speed and precision. Does away with expensive maintenance of 2-lip drills, No. 70 to ¼". Grinds drill point angles — 90° to 150°, clearance angles 5° to 15°. Reclaims small-size and broken drills. Drills stay sharp longer, last longer.

These features make the Dumore Precision Grinder better

EXCLUSIVE FEED-IN ATTACHMENT—Eliminates breakage and wheel gouging. Allows fine control of finish cuts.



BROKEN DRILL RECLAIMER — Roughing wheel for grinding and reshaping. Drill rest serves as fixture for wheel dresser.

ECONOMICAL WHEEL COST — No expensive shaped wheels. Web-thinning and roughing wheels eliminate frequent wheel dressing.

Ask your industrial distributor for a demonstration, or write

DUMORE PRECISION TOOLS
THE DUMORE COMPANY
1319 Seventeenth Street • Racine, Wisconsin

If you write maker identify as IEN - 13538

Get Wide Selection!

Whether you need open, drawout, or stationary enclosed units . . . with remote or local switching . . . there's an Allis-Chalmers low voltage air breaker for the job. These breakers are insensitive to shock and vibration under normal conditions and can be applied in any location.

Ratings are available to meet all low voltage applications. Interrupting capacities 25,000 and 50,000 amperes; continuous currents 35 to 1600 amperes; maximum voltage 600 volts, 25 to 60 cycles.

Get complete specifications from an Allis-Chalmers district office, or write Allis-Chalmers, Milwaukee 1, Wis.

A-4121

ALLIS-CHALMERS

If you write maker identify as IEN - 13539

WHEN IT'S LIQUID LEVEL CONTROL

it's FISHER

FISHER

LEVEL-TROL

... the Accepted Standard

for a liquid level controller that is high in sensitivity and accuracy, versatile in handling all kinds of liquids, ruggedly built, easy to operate and simple to maintain.

Write for Bulletin F-3

FISHER GOVERNOR COMPANY
Marshalltown, Iowa

FISHER

WORLD LEADER IN RESEARCH FOR BETTER PRESSURE AND LIQUID LEVEL CONTROL

If you write maker identify as IEN - 13540

SEE HOW General CAN CUT YOUR PACKAGING AND SHIPPING COSTS...

SEND FOR FREE BOOKLET

General Box COMPANY
1815 Miner Street
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Factories: Cincinnati; Denville, N. J.; Detroit, East St. Louis, Kansas City, Louisville, Milwaukee; Prescott, Ark.; Sheboygan; Winchendon Mass.; General Box Company of Mississippi, Meridian, Miss.; Continental Box Company, Inc., Houston.

If you write maker identify as IEN - 13541

lightweight powerful Mall production boosters

Model 146 Electric Drill. Seven speeds. Capacity: ¼" in steel, ½" in wood. $46.00

Model 1435 Electric Screwdriver. Capacity: ¼" hex bit—No. 10 flat, No. 12 round head screws. $65.00

Whatever your work requirement, you're sure to find the EXACT MALL TOOLS TO BOOST PRODUCTION and DOWN COSTS. The extensive MALL line includes every type and size portable electric tool imaginable to meet all kinds of production and maintenance assignments. The name MALL on any tool you buy is your assurance of lasting dependability and top performance... they're built by experts for experts. Mail this coupon today.

40 Factory-Owned Service Warehouses, Coast-to-Coast, To Give You Fast, Dependable Service.

MALL TOOL COMPANY
7782 S. Chicago Ave., Chicago 19, Illinois
Send me all the facts about MALL
☐ Screwdrivers ☐ Drills
Name
Company
Address
MU-44

USEFUL INFORMATION

(Continued)

If you write maker identify as IEN - 13542

PIPE . . Pressure-temperature ratings in booklet to assist in design of power plant piping

Pipe Fabrication Institute
813-A, Clark Bldg., Pittsburgh 22, Pa.

Technical Bulletin TB1-1953 is a 28-page compilation of some 5,000 pressure-temperature ratings. They apply to plain-end pipe used in power plant piping assemblies. They have been calculated by the recently revised formula and allowable stress values applying to the ASA Code for Pressure Piping and the ASME Power Boiler Code. The bulletin will be sent on request to qualified individuals. List price otherwise is $1.

If you write maker identify as IEN - 13543

PIPE . . Tables of engineering data for large corrosion resistant pipe and fittings

Stainless Welded Products Inc.
249-53 Cornelison Ave., Jersey City 2, N. J.

Company has assembled information on pipe, tube and welding fittings to assist in application of its Swepco corrosion-resistant products. Included in the 28-page "Engineering Data Tables" booklet is information on corrosion resistance, pipe flow, friction losses, ASME specifications.

If you write maker identify as IEN - 13544

PAINTING . . Silicone-base materials are the subject of new five-sheet information bulletin

Dow Corning Corp.
P. O. Box 592-A, Midland, Mich.

Three types of silicone-based protective coatings are described in new Data Sheet 7-100. One has a 100 per cent silicone resin vehicle which is baked on for maximum heat and corrosion resistance. The second is a combination silicone and alkyd resin vehicle and the third is a modified silicone. The bulletin describes characteristics, performance, limitations.

If you write maker identify as IEN - 13545

PLASTICS . . Useful technical data on polystyrene, Tenite II, Tygon, acrylic materials

Julius Blum & Co.
Dept. IEN, Carlstadt, N. J.

Machining instructions, temperature limitations, methods of adhering, fittings and clamps, are among the information given in new 16-page Stock Catalog on extruded plastic tubing, shapes, rod, and sheets. The catalog also describes properties and uses for the materials stocked. They include polystyrene, Tenite II, Tygon, Plexiglas and Lucite acrylics.

If you write maker identify as IEN - 13546

STAINLESS STEEL . . Corrosion resistance of austenitic chromium nickel stainless steels

International Nickel Co.
67 Wall St., Dept. IEN, New York 5, N. Y.

Eighteen tables of test data are presented in revised 32-page edition of Bulletin A-49 on corrosion resistance of austenitic chromium-nickel stainless steels. Topics include mechanism of corrosion resistance, factors affecting corrosion, behavior of these stainless steels under various corrosive conditions, preferred practice in construction and use of stainless steels.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13547

HERE'S THE HEAVY DUTY BELT YOU NEED FOR HEAVY LOADS

Write for further information

WISSCO BELTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION THE COLORADO FUEL AND IRON CORPORATION
SALES OFFICE AND PLANT — 16 Sterling Street, Clinton, Mass.

Belt illustrated, actual size

If you write maker identify as IEN - 13548

Select pressure— get uniform, constant hydraulic control with "FULFLO"

OIL BY-PASS RELIEF VALVES

MAINTAIN UNIFORM, CONSTANT PRESSURE from 5 to 500 lbs.

For ram presses, machine tool hydraulic mechanism, Diesels and oil-burning equipment.

BRASS OR CAST IRON • FEWEST PARTS • SIMPLEST DESIGN • TROUBLE-FREE • NON-CHATTERING

Standard or Flange Types

Pipe sizes: ¼" to 2"

WRITE TODAY
On your letterhead, please, for
FULFLO MECHANICAL DATA BOOK.
Please state if for Pumps—for Valves—or for both

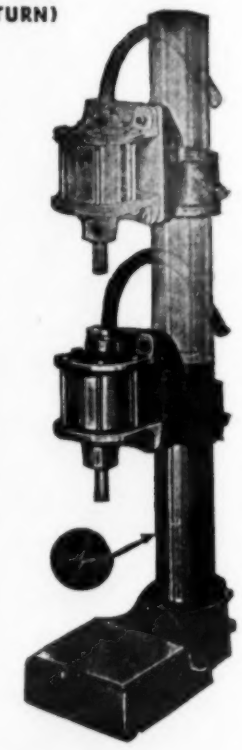
FULFLO THE FULFLO SPECIALTIES CO. Inc.
BLANCHESTER, OHIO.

If you write maker identify as IEN - 13549

AIR-MITE AIR ARBOR PRESSES

(AIR OR SPRING RETURN)

Completely Flexible



AIR-MITE now supplies solid steel upright columns in any lengths required to give you these important flexibility features:

1 Normal ram clearance of 0" to 6" may be increased to any clearance required for special application.

2 Supplementary or replacement cylinders with any ram stroke required are available for quick, easy mounting on same brackets.

3 Rapid socket wrench adjustment cylinder bracket swivels for perfect alignment with work.

Presses are available in ¼, ½, ¾, and 1 ton capacities — for stacking, riveting, marking, punching and similar operations.

Write for complete catalog of Air-Arbor Presses and single and double acting Air Cylinders.

AIR-MITE
4417-L West Carroll Ave.
Chicago 24, Ill.

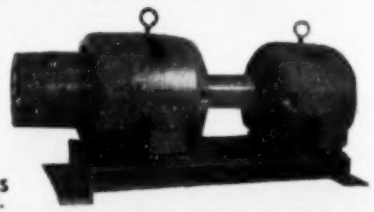
If you write maker identify as IEN - 13550

...FOR A JOB WELL DONE!

KATO ENGINEERED ELECTRICAL EQUIPMENT

KATO ENGINEERING has been building Special Electrical Equipment and machinery since 1928. Our modern, well equipped plant produces the finest in generators and electrical machinery from the smallest to the largest.

We Invite Your Inquiries on Special Requirements!



A. C. GENERATORS
Sizes from 100 watts to 300 K.W., in one or two bearings. Speeds of 720-3600 R.P.M., 60 cycles. Also 15-800 cycles, single and three-phase.
D. C. GENERATORS
Sizes ranging to 15 K.W.
ROTARY CONVERTERS
For changing D.C. to A.C.
HIGH FREQUENCY CHANGERS
D. C. MOTORS UP TO 10 H. P.
D. C. MOTORS WITH A. C. TAKE-OFF
A. C. MOTORS, SINGLE PHASE
1, 1½, 3 H. P.
MOTOR-GENERATOR SETS
D. C. to A. C., A. C. to D. C. 25 cycles to 60 cycles, 60 to 400 cycles.

KATO Engineering Company

WRITE TODAY FOR INFORMATION!
1478 FIRST AVENUE MANKATO, MINNESOTA

If you write maker identify as IEN - 13551

hydramotor

–industry's all-purpose heavy-duty motor valve

General Controls G-3 Hydramotor Valve, electro-hydraulically operated, provides positive control of steam, gases, heavy oils and viscous liquids. The operating mechanism contains only 3 moving parts and is lifetime-sealed in oil, eliminating lubrication and maintenance inspection. Its rugged design, two-wire control and current-failure safety, make General Controls' G-3 Hydramotor Valve an all-purpose valve for all kinds of commercial and industrial applications.

GENERAL CONTROLS
Glendale, California • Skokie, Illinois
Manufacturers of Automatic Pressure, Temperature Level and Flow Controls for Heating, Home Appliances, Refrigeration, Industrial and Aircraft Applications.
FACTORY BRANCHES IN 35 PRINCIPAL CITIES
SEE YOUR CLASSIFIED TELEPHONE DIRECTORY

If you write maker identify as IEN - 13552

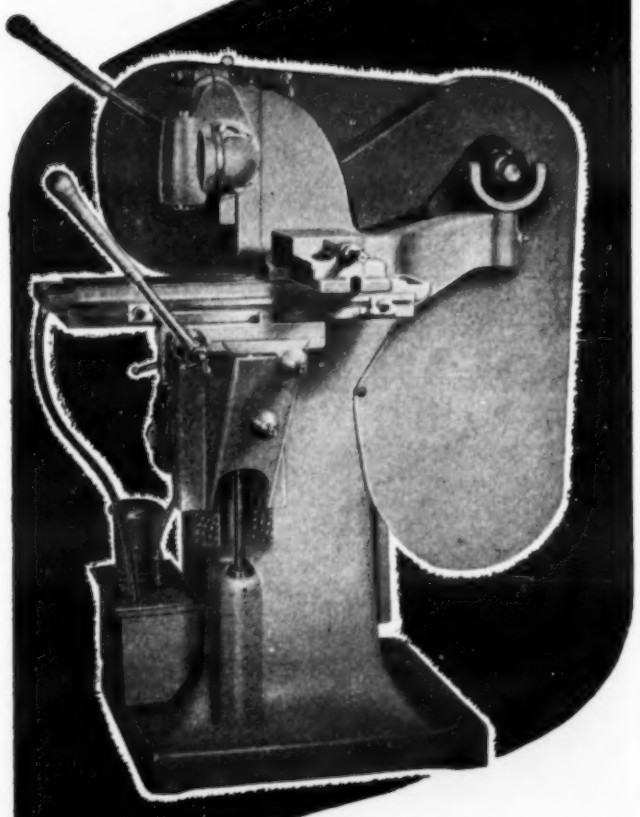
Cut Costs

on Tool Room, Development and Mass Production Milling with

U. S. No. 1

HORIZONTAL MILLING MACHINES

Time-proved, shop-proved, profit-proved "U. S. No. 1" heavy duty, hand-feed milling machines are outstandingly America's No. 1 Machine Tool value. Easily adapted to production with automatic devices.



SEND FOR DATA AND SUGGESTIONS

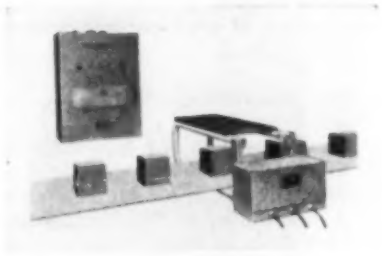
Suggestions as to how a U. S. No. 1 Milling Machine can cut costs on your particular production needs, as well as complete data on the basic machine and attachments, gladly furnished on request.

THE U. S.-BURKE MACHINE TOOL DIV.
Brotherton Road 5
Cincinnati 27, Ohio

If you write maker identify as IEN - 13554

TESTING . . Electronic detector finds metal in non-metallic materials

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.



Signals tramp iron

Aluminum tubes, 1½ in. in diameter, serve as the coils in this new electronic metal detector. They are attached to aluminum straps on a junction box in an arrangement that permits assembly over an installed conveyor. Two coil sizes include a rectangular assembly measuring 33 by 10 in. inside and a circular coil 4 ft. in diameter. Metal particles, that may be present in non-magnetic and non-conductive products passing on the conveyor, act to upset balance in an inductance bridge circuit. This produces a signal that is employed to operate an alarm or control. Operation is on 110-volt 60-cycle ac.

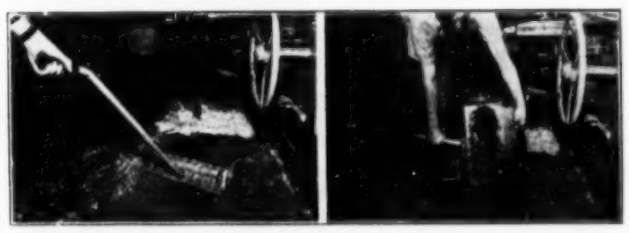
The control cabinet, a separate unit, contains the electronic components and bridge circuits in enclosed assembly. The door is gasketed for dust tight moisture resistant protection. It can be locked to prevent tampering. Controls and indicators are mounted on the outside of the door. A green light indicates when the power circuit is closed.

A red light provides an alarm signal when any metal passes through the coil. This light is operated by a relay with auxiliary contacts for other types of alarm either audio or visual or for a control circuit. Resetting is normally manual but can be specified with a timer and automatic reset. A yellow light indicates when the balance circuit is not operating or is outside of its limits. The belt, carrying the materials being inspected, can operate at speeds to 500 ft. per minute. The detecting coil can be immersed and products, such as logs, floated through it for metal detection.

If you write maker identify as IEN - 13555

MAGNET . . Permanent unit to pick up ferrous items from floor

Source: DINGS MAGNETIC SEPARATOR CO.
4738-42 W. Electric Ave., Milwaukee 46, Wis.



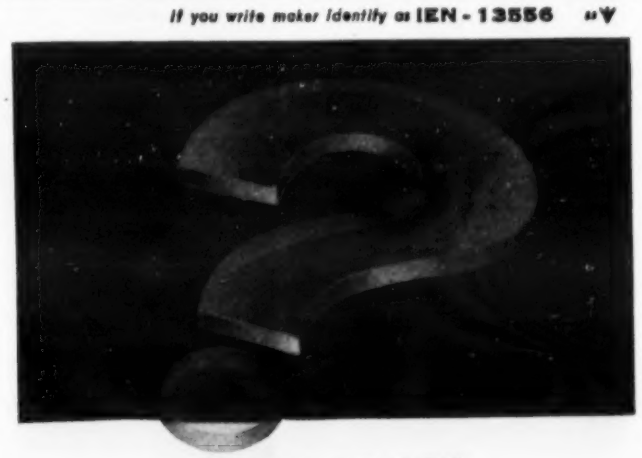
Light and easy to handle

Alnico magnets are assembled in line on the back of a metal plate in this new magnet floor sweeper. The plate is mounted on a pair of wheels and is covered with a canvas flap. Plate height above the floor is adjustable between 1 and 3 inches. Two models measure 16 and 20 in. in width. They weigh 27 and 35 pounds.

The assembly is wheeled along a floor to accumulate ferrous items. These items are stripped from the facing plate by lifting the canvas flap. Then the flap is returned to operating position and the magnet is ready for use again.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13556



WHAT IS IT?

Now you see it. Now you don't. It's any shape or size you want. It's heat resistant or heat absorbing or heat insulating. It's electrically conductive or non-conductive. Transparent, translucent or opaque. Patterned or plain. It can replace costlier materials in your product or production process. It is glass—one of the most versatile materials in the world. Write to Libbey·Owens·Ford and find out *what kind of glass* will help solve *your* problem, or save you money . . . and how it will do it. Ask for your free copy of SPD-53.

Libbey·Owens·Ford Glass Company, 92123 Nicholas Bldg., Toledo 3, Ohio.

LIBBEY · OWENS · FORD GLASS COMPANY

If you write maker identify as IEN - 13557

di-acro BOX FINGER BRAKE

1. Box and Pan Brake
2. Open End Brake
3. Standard Brake
4. Bar Folder

Form and duplicate a variety of shapes in metal as heavy as 16 gauge—widths up to 24"—with Di-Acro Brakes.

A number of forming jobs can be done with the Di-Acro Box Finger Brake, by simply adjusting or changing the type of mounting bar on contact surface. Di-Acro Standard and Radius Brakes are also available. Ten models.

Write for Free 32-Page Catalog

di-acro PRECISION METALWORKING MACHINES

O'NEIL-IRWIN MANUFACTURING CO.
718 8th Ave., Lake City, Minn.

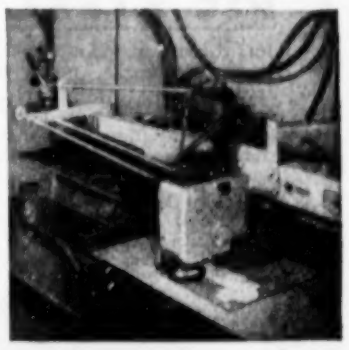
If you write maker identify as IEN - 13558

SIMPLIFY Your Shape-Cutting Jobs with the . . .

OXWELD Automatic Tracer

Trade-Mark

- Positive templet contact . . . electronic steering control . . . maximum tracing accuracy
- Templets are easy to make, low-cost
- No kerf allowance required in templet
- Dynamic braking prevents overruns
- Local or remote controls . . . simple to operate



With an OXWELD Automatic Tracer to guide your oxygen-cutting machine, you need never forego the advantages of templet tracing because of time or cost. Just cut actual size templets out of thin plastic sheet with scissors—that's all! Tracer follows practically any templet shape within extremely close tolerances. Drive action is smooth and steady with both single- and multiple-blowpipe setups. Write today for free booklet F-8086.

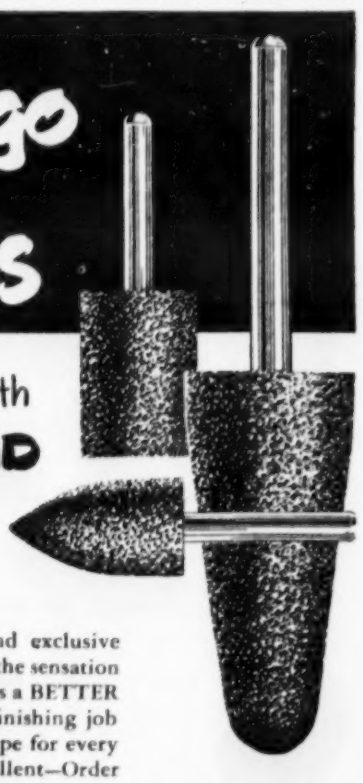
LINDE AIR PRODUCTS COMPANY
A Division of Union Carbide and Carbon Corporation
30 East 42nd Street UCC New York 17, N. Y.
Offices in Other Principal Cities
In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto
The term "Oxweld" is a registered trade-mark of Union Carbide and Carbon Corporation.

If you write maker identify as IEN - 13559

Chicago MOUNTED Wheels

. . . now even better with

79E BOND



Buy Chicago Mounted Wheels—bonded with 79E Bond—and you'll never use any other!

79E—a tough new bond exclusive with Chicago Wheel—is the sensation of the industry . . . it does a BETTER grinding, burring, and finishing job FASTER. A size and shape for every use. Deliveries are excellent—Order today.

CHICAGO WHEEL & *Mfg.* Co.
Dept. N • 1101 West Monroe Street, Chicago 7

If you write maker identify as **IEN - 13560**

The badge of quality on your product

The users of your product respect the name Marsh on a pressure gauge or dial thermometer. Adopt Marsh Instruments and you will know why they have become "The Standard of Accuracy". There is a Marsh for every service.

Ask for this new catalog... It covers your instrument requirements.

MARSH INSTRUMENT CO.,
Sales affiliate of Jas. P. Marsh Corporation,
Dept. A, Skokie, Ill. *Export Dept.*, 3501 Howard St., Skokie, Ill.

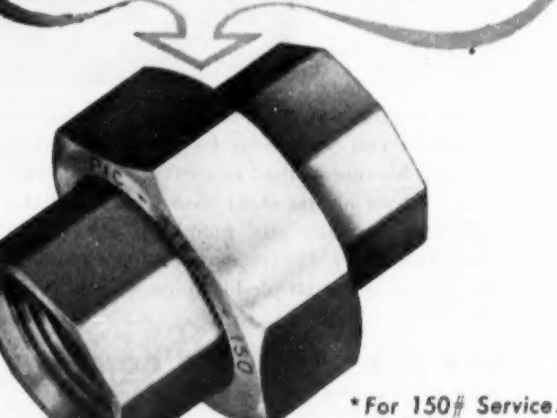
If you write maker identify as **IEN - 13561**

PIC of the Pack!

New Equipment Favorites — 100% Zinc Plated

PIC STEEL UNIONS*

Just the union for makers of original equipment, Pics are bright, good looking . . . and speed assembly and installation of your machines. Open end wrenches can be used because ends are uniformly flat-sided, uniformly parallel. Ends are strong, too — of heavy steel pipe coupling stock. Special wedge type bronze seat assures tightness. Zinc plating (even on threads) for maximum rust protection. And the best news is Pics cost *less* than a galvanized, *no more* than a black malleable union!



*For 150# Service...
Write for FREE SAMPLES

DART UNION COMPANY
130 THURBERS AVENUE, PROVIDENCE 5, R. I.

If you write maker identify as **IEN - 13562**

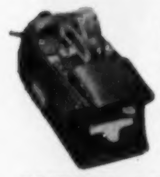
If you have a labeling problem ordinary labels can't solve...use **AVERY** Kum-Kleen self-adhesive **LABELS**

...the tough ones are our specialty

...where other types of labels are found "wanting"...or when you need to substitute an attractive pressure-sensitive label for a costly nameplate... Avery Kum-Kleen labels are the *best* solution to your problem!

...and so are the other kind..

...where you want *faster* labeling... improved appearance...labels that won't pop, curl or peel...or those the housewife can remove without soaking or scraping...there's no substitute for an Avery Kum-Kleen label!



faster • easier • more economical

Patented Avery dispensers...manual or electric... feed die-cut *pressure-sensitive* labels off roller tape, ready to be LAID ON any clean, smooth surface. No moistening...no sticky fingers.
Where can YOU use these labels in YOUR business? Write today for free samples, case histories and prices.

AVERY ADHESIVE LABEL CORP., DIV. 103
117 Liberty Street, New York 6 • 608 South Dearborn Street, Chicago 5
1616 So. California Ave., Monrovia, Cal. • Offices in Other Principal Cities
Originators of Pressure-Sensitive Labels

USEFUL INFORMATION

(Concluded)

If you write maker identify as **IEN - 13563**

TRANSFORMERS . . Instruction manual on operation and maintenance of dry-type transformers

Hevi Duty Electric Co.
4210-14 W. Highland Blvd., Milwaukee 1, Wis.

Trouble symptoms and causes are grouped in a table as part of new 12-page Manual T-2. The troubles are listed by electric, magnetic and dielectric circuits. Information is given on installation, maintenance procedures, testing, drying, permissible overloads, information given by the nameplate.

If you write maker identify as **IEN - 13564**

TRUCKS . . Instruction manual shows lift truck operator some fine points in handling

Hyster Company
2616 N. E. Clackamas St., Portland 8, Oregon

Fifth Edition is announced for the company's 24-page instruction manual, "How to Operate a Lift Truck". A copy will be sent you on request. It presents essentials of truck design and operation, safety rules, pallet types and handling, negotiating aisles, stacking, stowing.

If you write maker identify as **IEN - 13565**

VALVES . . Movable discs on plastic chart show port arrangements on four multiport valve types

Rockwell Mfg. Co.
624 N. Lexington Ave., Pittsburgh 21, Pa.

Drawings on the face of new 8¼ by 4-in. plastic chart show sections through 4-way, 3-way three-port, 3-way two-port and 3-way three port Transflo valves. A plastic disc in the center of each rotates to show fluid flow paths available. A set of fixed diagrams on the back shows port and stop arrangements that can be specified in the company's Nordstrom valves.

If you write maker identify as **IEN - 13566**

WATER TREATING . . How to take samples of water for plant boiler use is shown in bulletin

Allis-Chalmers Mfg. Co.
909 S. 70th St., Milwaukee 14, Wis.

"Effective Water Sampling" titles 4-page information sheet issued by the company's Water Conditioning Section. It tells when samples of plant water should be taken, where to obtain them, how they should be drawn, importance of using a cooling coil. Ask for Bulletin 28-X-7969.

If you write maker identify as **IEN - 13567**

WELDING . . Suggestions on design of a part to be made in welded steel construction

Lincoln Electric Co.
Box 3035-A, Cleveland 17, Ohio

Typical example is shown in new 6-page Bulletin S61-B on the mathematics and mechanics of designing a structural assembly in steel. The mathematics are condensed. The bulletin is No. 6 in a series on "Elements of WelDesign" in which tables of equivalents replace complicated mathematical formulae.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 13568**

the most widely used Electronic Supply Guide

free

ALLIED'S COMPLETE 268-PAGE 1954 CATALOG

Send for it

World's Largest Stocks of ELECTRONIC SUPPLIES FOR INDUSTRY

Simplify and speed your purchasing of electronic supplies and equipment. Send your orders to us for quick shipment from the world's largest stocks of special-purpose electron tubes, test instruments, audio equipment, electronic parts (transformers, capacitors, controls, etc.). Our expert Industrial supply service saves you time, effort and money. Send today for your Free ALLIED Catalog—the complete, up-to-date guide to the world's largest stocks of Electronic Supplies for Industrial use.

One complete dependable source for everything in electronics

ALLIED RADIO
100 N. Western Ave., Dept. 14-M-3
Chicago 80, Illinois

If you write maker identify as **IEN - 13569**

40 PAGES of helpful information

on Recovering Dusts, Fly Ash, Mists, Fumes and other Suspensions from Stack Gases

Latest data from Western Precipitation on Cottrell Recovery Equipment!

Do you have operations in your plant where gas-laden suspensions, wet or dry, are a problem? Such suspensions may be falling on surrounding property, causing nuisance difficulties. Or perhaps important values are being lost that can be profitably recovered.

Whatever the nature of *your* recovery requirements, you will find this 40 page Cottrell booklet of great help. It contains up-to-date data on the latest advancements in Cottrell recovery methods — prepared by the organization that pioneered commercial application of Cottrell Electrical Precipitators almost a half century ago and has consistently led in new Cottrell developments.

This booklet summarizes such important data as . . .

- Basic types of Cottrell equipment.
- Various types of Collecting Electrodes.
- Various Shell Constructions.
- Data on CMP Units.

. . . and many other helpful facts.

This data-packed booklet is free. Ask for Bulletin C103R.

WESTERN Precipitation CORPORATION

Main Offices: 1011 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
CHRYSLER BLDG., NEW YORK 17 • 1 N. La SALLE ST. BLDG., CHICAGO 2
1429 PEACHTREE ST. N.E., ATLANTA 5 • HOBART BLDG., SAN FRANCISCO 4
PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

If you write maker identify as **IEN - 13570**

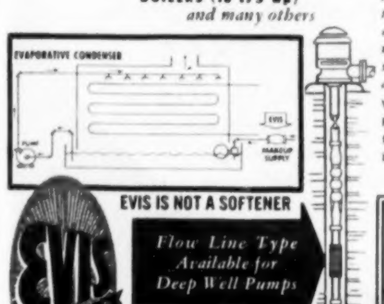
The Simplest Way to **SOLVE SCALE PROBLEMS**

Proven Uses Include
ALL PIPING SYSTEMS
CONDENSERS (most types)
COOLING TOWERS
ENGINES & COMPRESSORS
CUBE & FLAKE ICE MAKERS
BOILERS (to 175 wp)
and many others

EVIS *Water Conditioners are helping industry conquer its costly scale problems. Plant equipment is made to operate at higher efficiency. Maintenance costs are profitably lowered and shut-downs for periodic clean-ups are often entirely eliminated. The EVIS units are Specially Processed to impart a continuous catalytic action on water-solids flowing through it. This action alters physical behavior sufficiently to inhibit most scale formations. Many thousands of EVIS Water Conditioners are now in service.*

Write for further information or ask your Plumbing Supply, Air-Conditioning Refrigeration or Industrial Equipment Jobber.

SIZES | ⅜" thru 2" screwed, 2" thru 12" flanged



EVIS IS NOT A SOFTENER

Flow Line Type Available for Deep Well Pumps

SOLD ON 90-DAY MONEY-BACK GUARANTEE

EVIS MANUFACTURING CO. 40 Boardman Place, San Francisco 3, California

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CHICAGO EVIS-GREAT LAKES COMPANY
OMAHA EVIS-MIDWEST, INC.
DALLAS EVIS-SOUTHWEST CO.
ATLANTA EVIS-SOUTHEAST CO., 735 Spring St., N.W., VE-0241
PHILADELPHIA EVIS-MIDEAST CO., 4 E. Richmond St., NE 4-0855
ALBANY (New York) EVIS-NORTHEAST CO.
EXCLUSIVE MARINE DIST. MORAN-EVIS CO., SAN FRANCISCO, 420 Market St., DO 2-4565

If you write maker identify as **IEN - 13571**

NOLAN ONE-MAN CAR DOOR OPENER

Opens Doors in 20 seconds or less!

The Nolan Car Door Opener gives one man a tremendous amount of pulling energy, to get the most stubborn, hard-rolling door wide open in a hurry! New chain has 2000 lbs. tensile strength.

No gangs needed. No mangled limbs or loss of life. A few quick pulls on anchor chain gets any door open in a jiffy. The NOLAN saves its low initial cost in first hour of operation.

New safety features make the Nolan 1-Man Car Door Opener a more necessary labor-saving, money-saving help than ever before.

MANY THOUSANDS IN CONSTANT DAILY USE! FREE LITERATURE.

Order one or more NOLAN Model-H Car Door Openers now. Catalog on request.

$37.50 F.O.B. Bowerston

THE NOLAN COMPANY • 114-C Pennsylvania St., Bowerston, Ohio

If you write maker identify as IEN - 13572

Problem:

How To Seat More People

Answer:

SICO System

Industry's overcrowded cafeterias and working areas cannot seat increasing numbers of people by adding ordinary tables. The best solution to the problem is more *space*—the kind of space possible with portable SICO B-Y Table and Bench Service. SICO B-Y units seat more people with more comfortable leg and elbow room than any other practical system—increasing comfortable seating capacity by 33% in some rooms!

Durability-constructed of tubular steel, SICO B-Y units feature tough, wear-resistant top, detachable benches and "Floating Fold" action. B-Y tables are completely portable, fold and unfold without pinching fingers, toppling over or marring floors.

Other portable SICO tables—the LB, with "Floating Fold," without benches—and the smaller TIP-TOP with benches—are also efficiently comfortable. See your nearest SICO distributor or write *today* to

Seating inc. 6045 Pillsbury Avenue South, Minneapolis 19, Minnesota

If you write maker identify as IEN - 13573

SEE HOW YOU CAN

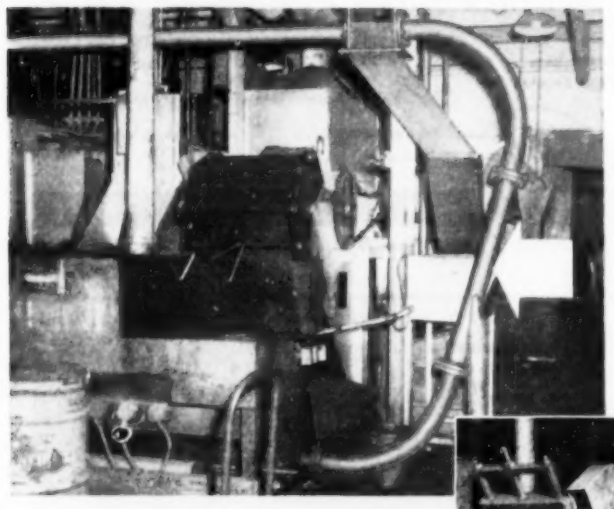
HANDLE "HOT JOBS"

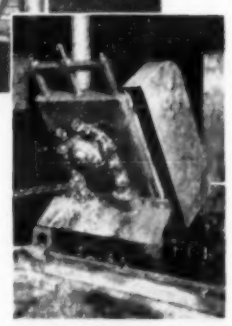
WITH

Hapman

TUBULAR CONVEYORS

and save money too!





Chip-handling conveyor will remove chips from coolant.

Cross section showing Sealed-Pin Chain and Neoprene Flights.

THREE MAN-DAYS AND EIGHT HOURS of valuable production time every month were formerly lost in removing scale from the quench tank at Bower Roller Bearing Co., Detroit. An unpleasant job, too!

NOW . . . A HAPMAN TUBULAR CONVEYOR removes the scale *as it collects* . . . takes *no* labor or production time . . . gives *big savings!*

HAPMAN'S UNIQUE, *patented* "Sealed-Pin Chain" construction is highly resistant to abrasive and corrosive action . . . gives greater chain life . . . cuts operating costs. Solid, *tubular* design is liquid-tight.

LET HAPMAN TUBULAR CONVEYORS handle *your* "hot jobs" . . . save *you* money . . . boost *your* efficiency. Get all the details.

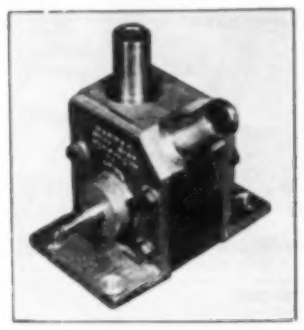
WRITE TODAY FOR BULLETIN IN-1253

Hapman CONVEYORS, INC.
DIVISION HAPMAN DUTTON COMPANY
KALAMAZOO MICHIGAN

If you write maker identify as IEN - 13575

PUMP . . Eccentric rotary design to handle liquid foods and chemicals

Source: VANTON PUMP CORP.
7308 Empire State Bldg., New York 1, N. Y.



No packing glands

New body block, made of stainless steel, encloses the company's patented Flex-I-Liner in this new Series-S rotary pump. The liner and its integral axial flange ride in a slot between inlet and outlet. Rotation of the eccentric, that mounts inside the liner, produces a rolling action between the eccentric and the block bore to draw fluid in at the inlet and carry it around the bore for delivery at the outlet. The liner can be specified in various types of rubber and flexible synthetic materials to suit the liquid being handled.

Capacity ranges from ⅛ to 20 gpm. with discharge pressure to 60 lb. and suction lift to 26 in. of mercury. The only parts in contact with the liquid being pumped are the stainless steel body block and the corrosion resistant liner.

If you write maker identify as IEN - 13576

VALVES . . Faucet washer employs duPont compound and Fiberglas

Source: J. A. SEXAUER MFG. CO.
2501-7 Third Ave., New York 51, N. Y.

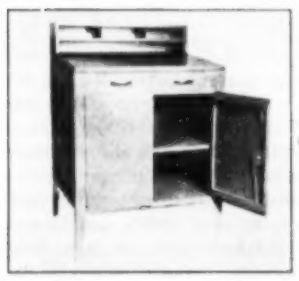
Data and prices upon request

Easy-Tite trade names a new faucet washer that will seal against leakage of either hot or cold water. It is made of a duPont compound combined with reinforcing Fiberglas. The washer will not absorb water. It is resistant to attack by chemicals. It recovers its original shape after having been deformed by pressure in a compression facuet. It is not subject to attack by impurities in water. It resists spreading, splitting and "mushing" out.

If you write maker identify as IEN - 13577

FURNITURE . . Steel standing desk with storage space for plant office

Source: ANGLE STEEL INC.
452 Thomas St., Plainwell, Mich.



Utility design

Cabinet Desk is a new design of the company's previously developed standing desk to provide a two-shelf storage area beneath the drawer in the top section. Overall dimensions are 34 by 30 by 53 in. in height at the rear. The drawer measures 24 by 28 by 3½ inches. At the back are open compartments to store small items. The desk top is 44 in. in height at the front. Finish is olive green. The unit is shipped knocked down for assembly on the job.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13578

GEAR PROBLEMS?

Check with-

FAIRFIELD!

If you use gears in the product you make, we believe it will pay you, as it has others, to become acquainted with FAIRFIELD—the place where fine gears are produced to meet your specifications EFFICIENTLY, ECONOMICALLY! Fairfield's production facilities are unexcelled for making all kinds of high precision, automotive type gears such as are now finding wide use in all branches of industry: for tractors, trucks, and buses . . . for agricultural implements . . . for construction machinery . . . for machine tools. Ask for latest literature describing Fairfield's facilities. Your inquiry will receive prompt attention.

FAIRFIELD
Manufacturing Co.
2333 S. Concord Road
LAFAYETTE, INDIANA

If you write maker identify as IEN - 13579

Easy to Install-Efficient

"Buffalo" AXIAL FLOW FANS

For light-duty

• VENTILATION • EXHAUSTING
• AIR-CONDITIONING SUPPLY

Lightweight, compact, non-overloading "Buffalo" Axial Flow Fans are ready for quick inexpensive installation in your own straight ductwork. They are sturdily built for many years of quiet, efficient "beeline" air delivery. See how "Buffalo" Axial Flow Fans will handle important air jobs for you and return important savings over the years.

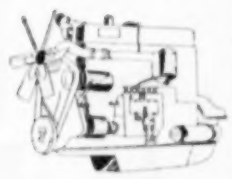
Write Today for Bulletin 3533

BUFFALO FORGE COMPANY
496 Broadway Buffalo, N. Y.
Publishers of "FAN ENGINEERING" HANDBOOK
Canadian Blower & Forge Co., Ltd., Kitchener, Ontario
Sales Representatives in all Principal Cities

If you write maker identify as IEN - 13580

CUT ENGINE OPERATING COST . . .

Accurate R. P. M. Indication with Electric Tachometers



Tell You How.

1) Determine and maintain your engine operating at its best fuel economy and output speed.

2) Protect engine from overspeed and abuse by being able to work within factory recommended R.P.M. range.

3) Check and control work output right at the power source with no delay and loss of material, whether pumping, moving, lifting, etc. Scales made to read in Gals/hr., Cans/hr., F., M.P. etc.

4) Electric tachometers help make jobs easier and more profitable, while protecting and reducing equipment operating costs.

Easy to install with indicator at any distance from engine. No flexible shaft worries. No wearing parts or batteries.

Generator and Indicator complete with custom made scale for your exact speed range and ratio, $42.75 & up.

SEND FOR MORE INFORMATION.

THE ELECTRO-MECHANO COMPANY
269 East Erie Road, Milwaukee 2, Wisconsin

If you write maker identify as IEN - 13581

BRAND NEW all-purpose CONE SEAL with TEFLON*

*DuPont Trade-mark for tetrafluoroethylene resin

"JOHN CRANE" TYPE 19 CONE SEAL WITH TEFLON

1. Temperature range: −100° to +450° F.

2. For all services, including water, oils, acids.

3. Pressures to 200 psi.

4. Has all the plus requirements of a good seal: positive drive, axial and radial movement, free sliding flexible spring action to compensate for wear of carbon washer, ease of application and replacement, long life, compactness.

5. Packaged seal, presently designed for small shafts ¼, 5/16, ½, ⅝, ¾" dia.

6. Tooled for the high production field. Has a wide field of application.

7. Can be manufactured at an economical price.

8. Manufactured in the "pressed-in" type where seal unit is held stationary.

In the early stages of any seal application we might be helpful. For instance—the metallurgy of a seal is important; you may have space limitations; or you may have r.p.m. problems. These are only a few points. Drop us a line.

Crane Packing Company, 1815 Cuyler Avenue, Chicago 13, Illinois.

JOHN CRANE CRANE PACKING COMPANY

If you write maker identify as IEN - 13582

HERE'S A FORK TRUCK

that will really reduce your handling costs

A factual comparison of types and makes will show that Lewis-Shepard Spacemaster Electric Fork Trucks give you more of the features you want, the quality and dependability you need, and the savings you expect.

1. *Operate in less space* — compact design and smaller turning radius.
2. *Greater speed*—more powerful traction motor, faster lift motor.
3. *Safer reverse operation*—Standrive gives operator complete control in reverse.
4. *Smoother, timed acceleration* — no jerks . . . smoother deceleration too. Deadman brake for extra safety.
5. *No grease points* — and absolutely no under truck adjustments.

TO HELP YOU BASE YOUR DECISION ON FACTS

Get this handy "Fork Truck Comparison Chart". It lists buying "guides" . . . permits you to make your own unbiased comparison. Write for it.

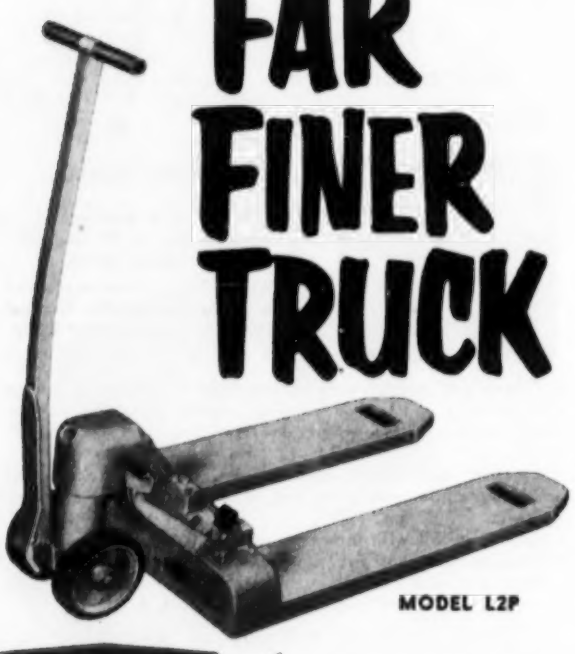
LEWIS-SHEPARD
Products, Inc.
133-12 Walnut St., Watertown 72, Mass.

Nation-wide Service — See "Trucks, Industrial" in your Yellow Phone Book

If you write maker identify as IEN - 13583

For a few dollars more, you get a

FAR FINER TRUCK



MODEL L2P

RAYMOND *Lightweight*
PALLET LIFT TRUCK

● When buying a lift truck, don't be guided by price alone. Remember . . . performance is far more important. The RAYMOND Lightweight Lift Truck, for example, costs slightly more than similar trucks . . . yet there's a vast difference in how long and how well it performs!

● This 2,000-lb. capacity truck is constructed of only the finest materials, backed by 30 years of manufacturing skill. Nowhere in this RAYMOND Truck is quality compromised. The result is a rugged lift truck offering all these outstanding features:

ONE-PIECE WELDED FORKS . . . ⅓ times stronger than bolted fork construction.

CHROME PLATED PUMP PISTON . . . prevents leakage, prolongs pump life.

STRONGER CONSTRUCTION . . . heat-treated alloy steel ram pistons, axles, lever shafts.

HIGHLY MANEUVERABLE — **FOOT PEDAL OPERATED**
EFFORTLESS PALLET ENTRY — **REINFORCED HANDLE**
THOROUGHLY LOAD TESTED — **DUAL PURPOSE BRAKE**
FACTORY ADJUSTED LINKAGE — **LIGHTWEIGHT**

● *Mail This Coupon*

The RAYMOND CORPORATION
3523 Madison St., Greene, N.Y.

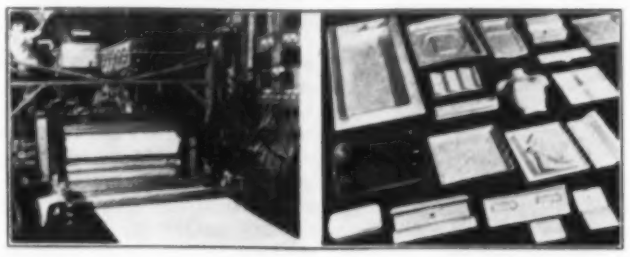
Please send me Bulletin 207, describing your 2,000-lb. capacity Lightweight Lift Truck, as well as your 4,000 and 6,000-lb. capacity Lift Trucks.

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____

If you write maker identify as IEN - 13585

PLASTIC . . Thermoplastic sheet and specified vacuum formed products

Source: AUBURN BUTTON WORKS INC.
50 Canoga St., Auburn, N. Y.



Minimizes tool cost

The company announces installation of equipment and its availability on a contract basis to manufacture extruded thermoplastic sheet and also to vacuum form specified products from the sheet. The sheet material is produced and cut off as required. It is placed over a half mold that connects to the vacuum source and heat is supplied from above by electric elements. When the sheet is softened, the vacuum is applied and the sheet is formed into the contours of the mold. Upon release of the vacuum, the finished piece can be lifted out and another plain sheet put in its place.

If you write maker identify as IEN - 13586

SEALING . . Molded rubber ring presents four continuous sealing lips

Source: MINNESOTA RUBBER & GASKET CO.
3640 Wooddale Ave., Minneapolis 16, Minn.

Square in effect

Quad Ring trade names a new sealing ring designed to take the place of O-rings in cases where the latter have failed to seal properly. The four sealing lips eliminate spiral twist and act to completely fill a packing groove. Sizes are available in the same range as the company's oil resistant O-rings previously described IEN-3894-50. This range is from ⅛ to 1½ in. in inside diameter by ¼ to 1¾ in. outside. Other sizes can be specified.

If you write maker identify as IEN - 13587

A small company moved from rented loft space into its new building in a suburban community and immediately was faced with the problem of increasing its employment from 100 to 200 people in the face of competition with some 300 other plants in a limited labor market. The manner in which the problem was solved by the company's counsel, Fred Wittner Advertising of New York City, makes highly interesting reading and outlines a plan that every company, large or small, can follow to its own advantage. The story has been written in a four page bulletin under the title, "Newspage Solves Electric Regulator's Employee-Recruitment Problem". You can secure a copy on request from Electric Regulator Corporation, Off Perry Ave., Dept. IEN, Norwalk, Conn.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13588

INDUSTRIAL RUBBER PARTS

produced by the **ARco** *form-dip process*

CONTROL BOOTS ● MOISTURE AND DUST SHIELDS ● ELECTRICAL SHROUDS AND COVERS ● BELLOWS ● OTHER SHAPES IN EXPERIMENTAL OR PRODUCTION QUANTITIES

● Economical, uniform ARco form-dipped rubber parts . . . designed in difficult shapes . . . made to exacting specifications . . . *can be produced to meet unusually short delivery schedules!*

Rubber parts made by ARco form-dipping are preferred for quality and durability in the electrical, machine tool, automotive, aircraft and other numerous fields. You, too, can benefit with these superior ARco products.

WRITE TODAY! Get this valuable information on ARco Rubber Parts, rubber covered metal parts and equipment.

AUTOMOTIVE RUBBER CO., INC.
12556 Beech Rd. at P. M. R. R., Detroit 28, Mich.
●
ARCO RUBBER PROCESSORS
4033 HOMESTEAD ROAD • HOUSTON, TEXAS

ANYTHING CAN BE COVERED WITH RUBBER — BY ARco

MANUFACTURERS • DESIGNERS • ENGINEERS

If you write maker identify as IEN - 13589

HIGH AND LOW TEMPERATURES

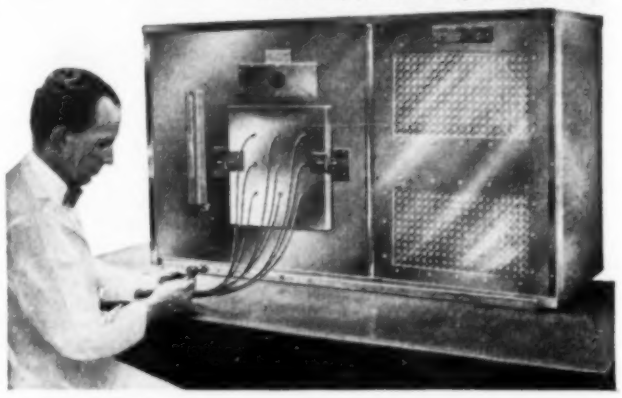
NEW BENCH-TYPE TEST UNIT

WEBBER
TRADE MARK REGISTERED

COMPLETE TEMPERATURE RANGE
TESTING UNITS

Combine high and low temperatures within the same cabinet with all controls self contained. Unit measures 50"x28"x20" with a testing chamber 12"x12"x12". Temperature range is from -80° F., to 185° F. Heat application is accomplished with reverse cycle refrigeration, which eliminates the hazards associated with open heating elements. A blower is provided for even distribution of temperatures and greater testing accuracy. Latch-type or hinge-type door optional. Accelerated pull-down to -80° in 30 minutes or less.

Write today for more complete information



INDUSTRIAL FREEZER DIVISION
WEBBER MANUFACTURING COMPANY, INC.
(Formerly Webber Appliance Co., Inc.)
2746 MADISON AVENUE • INDIANAPOLIS 3, INDIANA

If you write maker identify as IEN - 13590

ONE MILLION RELAYS

Over 1000 Types
24 HOUR DELIVERY FROM OUR STOCK!

- Standard, Respected Brands
- Brand New, Boxed
- Inspected and Guaranteed
- Priced to Your Advantage

Our relay stock, which is the world's largest, has been carefully built up over a period of several years. Nothing but first run, professionally selected items are carried.

Send us your relay requirements. You will receive immediate quotations.

samples on request. *Phone, Wire or Write*

Relay Sales
SEeley 8-4146
4721 W. MADISON STREET
DEPT. NO. 9 CHICAGO 44, ILLINOIS

If you write maker identify as IEN - 13591

Increase Production . . .

REDUCE FATIGUE*

Durable Sponge Rubber

STANDING MATS

*Fatigue robs you and your business! Long hours of standing, dampness and vibration take their daily toll of efficient help!

Production line workers, machine operators, store clerks, EVERYONE works better when using Durable Standing Mats. They're safe—the beveled edges prevent tripping, the corrugated top is non-slip! Factories, institutions and stores all over the nation have PROVEN the effectiveness of DURABLE SPONGE RUBBER STANDING MATS.

Available in all sizes up to 35 x 4-feet

Write for free sample and current price list

Durable **RUBBER PRODUCTS CO.**
549 WEST FULTON STREET
CHICAGO 6, ILLINOIS

If you write maker identify as IEN - 13592

Left— Union Special Style 20100 H Bag Closing Machine

Here's how to close **MULTIWALL PAPER BAGS**

FOR lower production costs ...stronger, neater closures ...ability to get out rush orders in a hurry, you can't beat Union Special Bag Closing Machines! Specially built to stand up under heavy production schedules, these machines provide the high output rates needed to meet modern competitive conditions.

In the Union Special line, it's easy to find the right unit to meet your particular requirements. ASK FOR RECOMMENDATIONS.

SEND FOR THIS BULLETIN!

Get your copy of this 16 page illustrated bulletin containing helpful data and charts on the complete Union Special line of bag closing machines. UNION SPECIAL MACHINE CO., 410 North Franklin Street, Chicago 10, Illinois

UNION SPECIAL

If you write maker identify as IEN - 13593

Want Your PLYWOOD "MEDIUM RARE"?

We know it looks silly to compare a piece of plywood with a juicy steak, but we did it just to illustrate another AETNAPLY service.

You can order your plywood "Just the way you want it" when you order from AETNA. As a steak is ordered to suit your *taste*— Plywood is ordered to suit your *job*.

No matter what your production requirements are, check with AETNA. Do you want it cut-to-size; machined; dip-treated; sprayed? We'll furnish it that way. Do you require odd-shaped or odd-size stock? We'll furnish it as you want it when you want it.

Send your blueprints, specification sheets, or just the general idea. We'll work it out for you and send you a quote or the order—just the way you want it.

AETNAPLY PLUS VALUES

Over 50 species of Plywoods and Veneers Foreign and Domestic.

◆

Free Engineering Service to help you use plywood to your best advantage.

◆

24-hour Shipping Service.

◆

Direct mill shipments to your exact specifications.

◆

Other woodworking products: Glues, Sealers, etc.

WRITE AETNA for the RIGHT PLYWOOD

AETNA PLYWOOD & VENEER CO.

1724 N. Elston Avenue • Chicago 22, Illinois

ARmitage 6-7100

BRANCH WAREHOUSES: Grand Rapids 7, Mich.; Indianapolis 2, Ind.; Rockford, Ill.; Detroit 9, Mich.

PLYWOOD for every purpose — every industry

If you write maker identify as IEN - 13595

BUILDING . . Packaged gate house is made of porcelain enameled steel

Source: ERIE ENAMELING CO. 1450 W. 20th St., Erie, Pa.

Ready for use on arrival

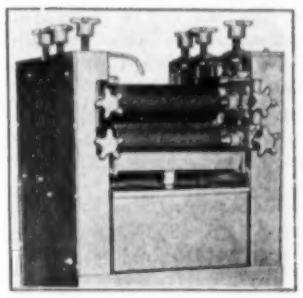
Dimensions have been standardized at 4 by 11 by 7 ft. in ceiling height, for the company's packaged gate house, previously described IEN-6687-53 as a unit built to specification. The new porcelain enameled building, completely assembled, can be delivered ready to set up on the user's foundation or can be shipped in pre-assembled sections for erection on the job. It is designed to accomodate two or more guards or attendants. It will not need painting or refinishing during its life in service.

Walls and ceilings are insulated and provision is made for one or two electric heaters or fans. The window openings mount sliding aluminum sash. The steel door also slides to conserve space and present no obstruction. Interior lighting is adjustable and an extra fluorescent external light fixture can be added in a special light trough under the eaves. Desk, folding wall stools, door splash guards can be added. The factory assembled building without accessories lists at $2,425. Pre-assembled sections, ready to erect, list at $2,150.

If you write maker identify as IEN - 13596

LUBRICATING . . Roll type machine coats and feeds coil stock to a press

Source: UNION TOOL CORP. 316 E. Market St., Warsaw, Ind.



Built to order

Metal sheet, in specified width to 60 in. and from 0.005 in. in thickness and up, is taken by this new machine from an uncoiler, is deburred on the edges, coated with drawing compound on both faces and fed to a press. The assembly shown in the illustration handles stock width to 10 in., measures about 24 by 19 by 44 in. and weighs 750 pounds.

The first of four sets of rolls are made of steel, hardened and ground, to press out any burred edges. This set is followed by rubber covered nip rolls to feed the stock. The third set is made of chromium plated steel. It mounts the doctor rolls. The fourth set contains smooth ground rubber covered coating rolls.

A pump circulates the compound from a 5-gal. sump under the rolls to between the doctor and coating rolls. Calibrated hand wheels are turned to adjust the doctor rolls to control thickness of the compound application. The 10-in. machine is driven by a 1-hp. ball bearing motor.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13597

New **"EARN-ITS-OWN-WAY" PLAN** puts Automatic in your plant... *today!*

Skylift—packed with exclusive, top-performance, money-saving, features! For trouble-free, heavy duty service

with new FINANCE-LEASE PLAN, Automatic Trucks can pay for themselves!

All AUTOMATIC industrial trucks are covered by this new plan for financing and leasing materials handling equipment you need . . . so you can get your truck *immediately* and let it *earn* for you while you pay!

FINANCING PLAN

A sensible down payment delivers your Automatic truck. The balance is on deferred payment, from 6 to 36 months. *Whatever schedule is best for you!* The regular, low monthly charges include everything!

LEASING PLAN

Leases for 2 to 5 years, or 2 to 9 years, depending on type of equipment. Low monthly costs, and a variety of lease options for renewals or for purchase available on request.

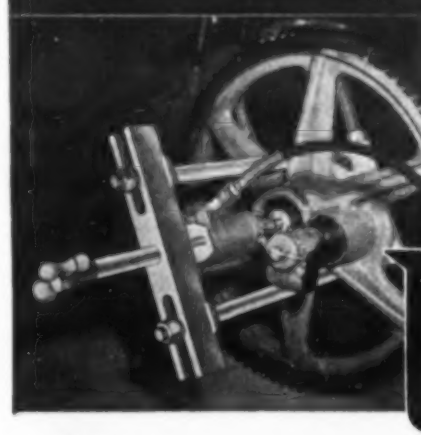
Don't delay getting full information on this easy new plan for getting AUTOMATIC trucks *at once!*

Automatic

WORLD'S LARGEST EXCLUSIVE BUILDER OF ELECTRIC-DRIVEN INDUSTRIAL TRUCKS
109 W. 87th St., Dept. X-3
Chicago 20, Ill.

If you write maker identify as IEN - 13598

PUSH... PULL 75% FASTER 90% EASIER WITH THE CENTER HOLE



OTC

50 TON HYDRAULIC PULLER

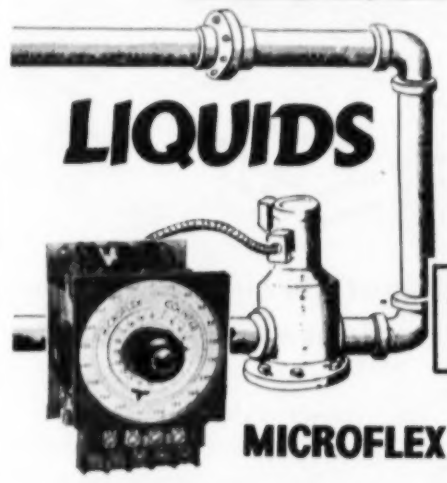
Removes or installs bearings, gears, pinions, shafts, studs, wheels, pulleys, etc.—75% faster and 90% easier. This new OTC 50 ton ram is completely portable (weighs only 45 lbs.)—has remote control pump—interchangeable ram heads—and can be used as a production holding fixture. Also available in 17½ and 30 ton sizes. *Booklet describes complete line and uses of OTC equipment.*

WRITE FOR FREE BOOKLET

OWATONNA TOOL COMPANY
371 CEDAR STREET • OWATONNA, MINN.

If you write maker identify as IEN - 13599

when **COUNTING LIQUIDS** EAGLE means "AUTOMATIC ACCURACY"



MICROFLEX COUNTER

For automatic control of materials by time or count, send your application problem to Eagle's experienced engineers. Eagle has suggested answers and speeded up operations in many plants from coast to coast.

TELL US YOUR PROBLEMS — WE'LL DO THE REST

EAGLE TIMERS WILL MAKE YOUR MACHINES **AUTOMATIC**

EAGLE SIGNAL *Industrial Timers*
EAGLE SIGNAL CORPORATION MOLINE, ILL.

If you write maker identify as IEN - 13600

Lightweight Easy-to-use Strap Cutter

This lightweight cutter cuts steel strapping swiftly and easily with just the pressure of your hand.

Weighing just one pound and only 9½ inches long—Acme Steel's E14AO Strap Cutter cuts steel strapping up to ¾ inch. Built-in band guide keeps strap from turning on edge or wedging between blades. Write Acme Steel Products Division, Dept. IEN-123, 2840 Archer Avenue, Chicago 8, Illinois.

Strap It . . . Stitch It . . . Ship It . . . Safely

ACME STEEL

If you write maker identify as IEN - 13601

TODAY'S BEST BUY!

Write for Details or See Your JOHNSON DEALER

MODEL J
10" x 18" Capacity

BONUS CAPACITY AT NO EXTRA COST

CUTS 10" ROUNDS, 18" FLATS

JOHNSON MANUFACTURING CORP.
ALBION, MICHIGAN

If you write maker identify as IEN - 13602

HOW ABOUT IT?

is YOUR plant clean enough for precision defense production?

Model 218

Don't sabotage your plant facilities with dirt and debris. Clean plants measure up to defense production standards.

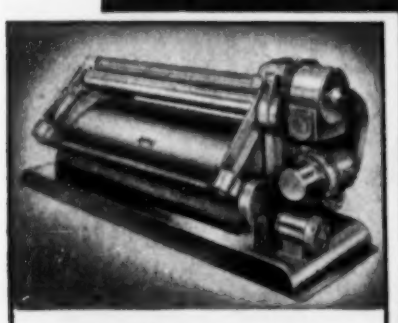
Send for important Doyle Vac-It information today. There's no obligation.

Doyle VACUUM CLEANER CO.
2235 Stevens St., S. W. Grand Rapids 7, Michigan

If you write maker identify as IEN - 13603

REED ENGINEERING COMPANY

Modern Metalworking Equipment



BENDING ROLLS
TURNING ROLLS
AUTOMATIC WELDING FIXTURES

REED PLATE BENDING ROLLS
★ In 18 models, ranging from 3 ft. x 10 ga. to 8 ft. x ¼" in capacity
★ Rugged, all steel construction
★ Built-in, silent worm gear drive
★ Durable, special bronze bearings
★ Power adjustment & air drop end available on most models

WE INVITE YOU . . . to write us for specifications, prices, list of REED users near you. No obligation. Just write on your letterhead.

REED ENGINEERING CO. 1009 W. FAIRVIEW CARTHAGE, MO.

If you write maker identify as IEN - 13604

TESTING . . Two axis recorder plots test data on standard graph paper

Source: F. L. MOSELEY CO.
407-11 N. Fair Oaks Ave., Pasadena 3, Calif.

Plots Y = f(X)

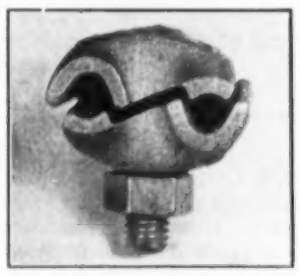
New Autograf draws coordinate graphs from any data that can be reduced to electrical form. It operates through two independent rebalancing servo actuated recording axes. It eliminates the need to read meters, collect columns of data, transfer the data to a graph and then approximate a curve. Related curves can be drawn in families as fast as the input information can be altered. The trace is made on standard 8½ by 11 in. graph paper at 10 in. per second.

The pen is replaced with a pick-up stylus, when the instrument is employed as a curve follower, and the curve to be reproduced is drawn with conducting ink on a standard sheet of graph paper. The ink is energized with a high frequency current. The pick-up stylus includes a coil which, sensing the magnetic field radiated from the graph line, draws the pen servo to continuously position the stylus over the curve. This servo also drives a three-turn helical potentiometer which supplies the output Y-axis information.

If you write maker identify as IEN - 13605

CONNECTOR . . Screw type clamp secures cable for tap-off conductor

Source: THOMAS & BETTS CO.
60-A Butler St., Elizabeth, N. J.



Six sizes

Two part aluminum body is held together by a galvanized steel carriage bolt and nut in this new parallel groove connector. The bolt end is peened so the nut cannot come off. Turning the nut in reverse direction opens the clamping faces for application over a cable and a tap-off conductor. The aluminum body is dip coated in an oxide-inhibiting seal after it has been chemically cleaned.

The coating on the contact surfaces comes off during installation to provide a high conductivity connection. The unit can be applied on copper, aluminum and ACSR conductor diameters from No. 6 to 4/0 AWG.

If you write maker identify as IEN - 13606

Geon vinyl plastic, formulated to flow into spot welded seams in a motor vehicle body, is applied by means of air guns on a production line. Then the body is spray painted and baked. The latter operation partially fuses the plastic and a second baking, after the final coating of enamel, cures it. The plastic, however, remains pliable and resistant to attack by heat or cold, oil, grease, acid, alkalis and most solvents. It is manufactured by B. F. Goodrich Chemical Co., 324 Rose Bldg., Dept. IEN, Cleveland 15, Ohio.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13607

THIS MACHINE TOOL CONTROL TRANSFORMER

IS ENGINEERED TO PROVIDE THE REGULATION YOU NEED

This New Series Acme Electric Machine Tool Control Transformer more adequately withstands the low power factor and current surges when solenoids, contactors and switches of machine tool controls go into action. Sturdily constructed to provide adequate capacity for momentary overloads. Compare regulation curves. Write for Bulletin CT 194.

ACME ELECTRIC CORPORATION
MAIN PLANT: 2612 WATER STREET • CUBA, N. Y.
West Coast Engineering Laboratories:
1375 W. Jefferson Blvd., Los Angeles, Cal.
In Canada: Acme Electric Corp. Ltd. • 50 North Line Rd. • Toronto, Ont.

Acme ACME Electric TRANSFORMERS

If you write maker identify as IEN - 13608

Introducing...

the SKINNER V10
MINIATURE PRECISION HYDRAULIC VALVE

Skinner's new V10 Series Miniature Hydraulic Valve is an amazingly compact unit, capable of handling pressures up to 1000 P.S.I.

This precision-made valve is ideally fitted for use in the automatic operation of single and double acting hydraulic cylinders, and in pilot control of larger three and four way hydraulic valves.

The V10's construction is consistent with the Skinner quality tradition: most internal parts are of stainless steel; the slide mechanism has a precision-ground piston, and a bore honed to extremely close tolerance, thus minimizing leakage.

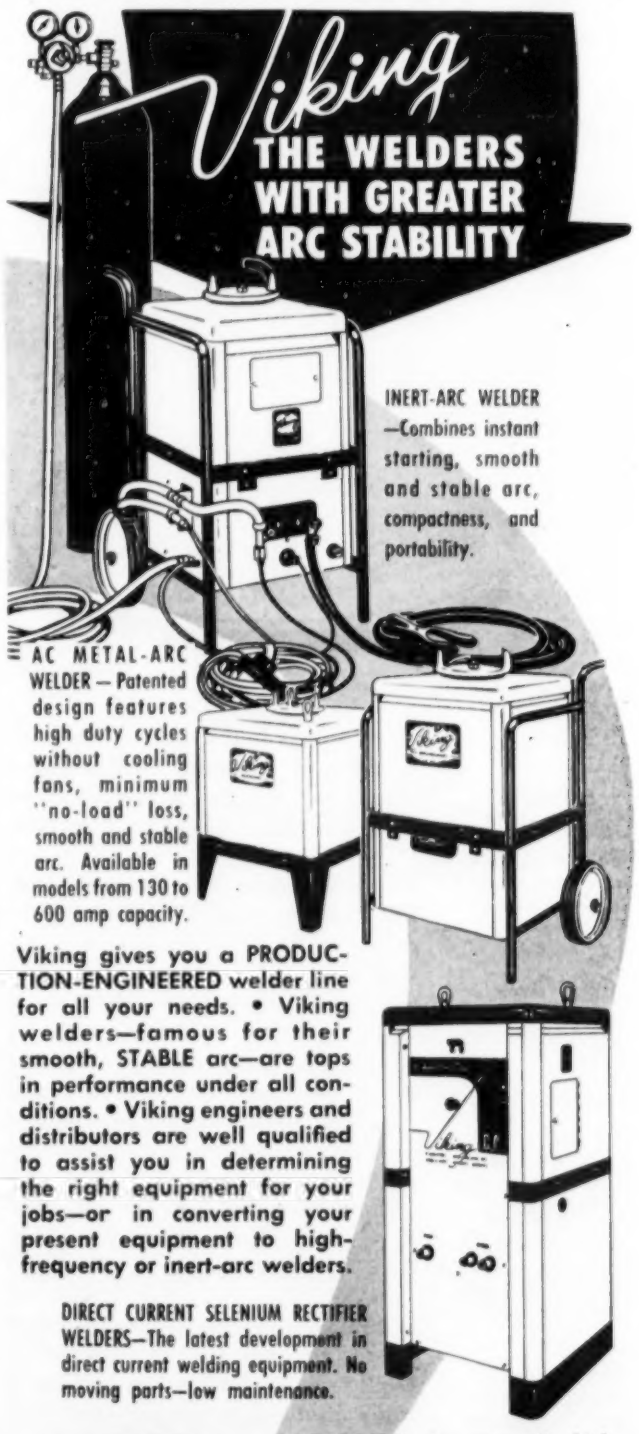
Specifications: 1/8" NPT threaded ports; effective orifice diameter of 3/32"; available in the full range of AC and DC voltages.

The economical design and unusually small size of the Skinner Miniature Hydraulic V10 valve will enable many manufacturers to install it in places where, heretofore, remote control devices have been considered impractical.

Skinner ELECTRIC VALVE DIV.
THE SKINNER CHUCK COMPANY
110 Edgewood Ave., New Britain, Conn.

If you write maker identify as IEN - 13609

Viking
THE WELDERS WITH GREATER ARC STABILITY



INERT-ARC WELDER —Combines instant starting, smooth and stable arc, compactness, and portability.

AC METAL-ARC WELDER — Patented design features high duty cycles without cooling fans, minimum "no-load" loss, smooth and stable arc. Available in models from 130 to 600 amp capacity.

Viking gives you a PRODUCTION-ENGINEERED welder line for all your needs. • Viking welders—famous for their smooth, STABLE arc—are tops in performance under all conditions. • Viking engineers and distributors are well qualified to assist you in determining the right equipment for your jobs—or in converting your present equipment to high-frequency or inert-arc welders.

DIRECT CURRENT SELENIUM RECTIFIER WELDERS—The latest development in direct current welding equipment. No moving parts—low maintenance.

RAD-ARC-TROL—An automatic high-frequency arc starter and stabilizer for use on ANY MAKE of AC or DC welder. Model MR is used for light gauge metallic-arc welding. Model MRG converts your present welder to the Inert-arc Process. The gas regulating attachment is included in the unit.

Write for Complete Information on all Viking Welders

Viking DIVISION OF PROGRESSIVE WELDER SALES COMPANY
3060 EAST OUTER DRIVE • DETROIT 34, MICHIGAN

If you write maker identify as IEN - 13611

ENAMELSTRIP

STEEL · ALUMINUM · BRASS · PRE-FINISHED COLOR COIL

assures a perfect finish before fabricating

You can easily cut production time and cost with Enamelstrip, the continuous-feed, pre-colored metal coil. Leading manufacturers of metal products are using it with outstanding results in a wide variety of items. Enamelstrip's exclusive, flexible finish withstands the stresses of drawing, bending and forming without cracking or peeling. Many companies have entirely eliminated their finishing departments! Any metal in any finish will be coated and slit to your own specifications.

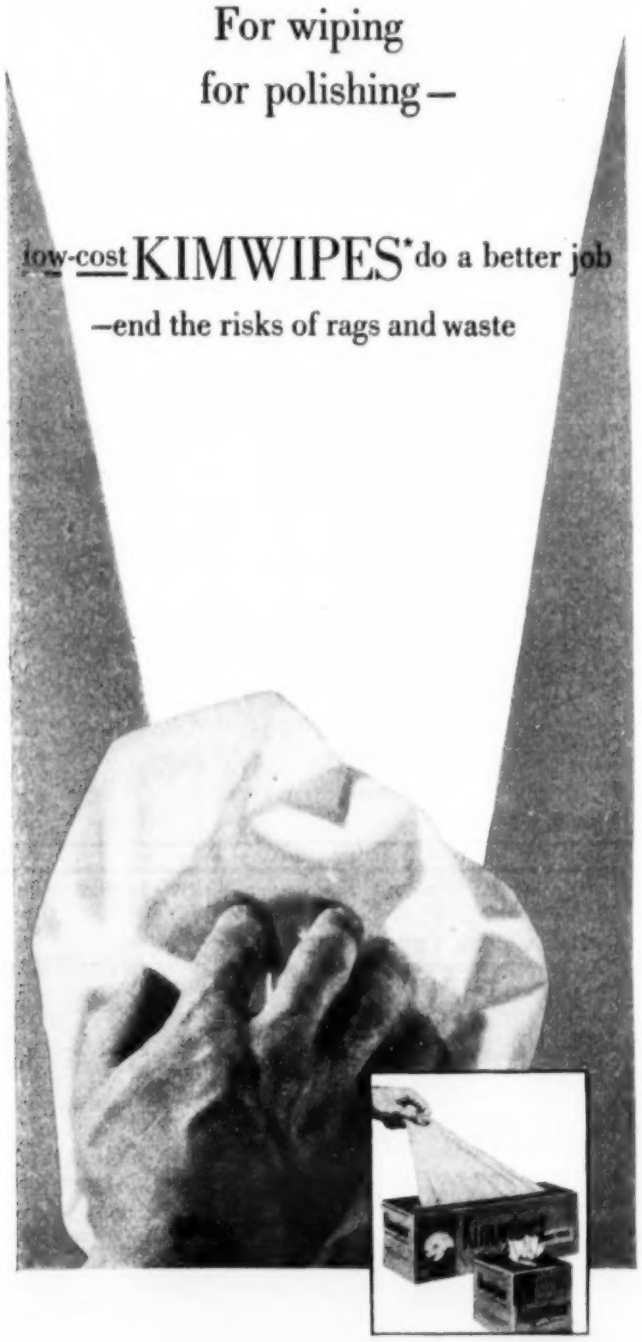
Write TODAY for detailed color bulletin

THE COATED COIL CORPORATION
511 West 30th Street, New York 1 • LOngacre 5-3161

If you write maker identify as IEN - 13612

For wiping
for polishing—

low-cost KIMWIPES* do a better job
—end the risks of rags and waste



Here's a soft, clean, absorbent tissue made especially for precision polishing and tough-job wiping. Kimwipes industrial tissues are non-abrasive—you'll never have a worry about scratching, linting or disintegrating. Strong enough, too, for most any job, yet so inexpensive a fresh, clean tissue can be used every time. Two sizes—15"x18" and 5"x9". Order a supply from your distributor today or write to Kimberly-Clark Corporation, Neenah, Wisconsin.

KIMWIPES INDUSTRIAL WIPING TISSUES

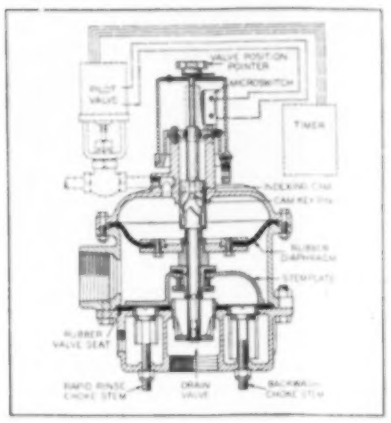
A Product of Kimberly-Clark

*T. M. REG. U. S. PAT. OFF. & CAN.

If you write maker identify as IEN - 13614

VALVE . . Pressure operated, timer controlled for water treating

Source: AUTOMATIC PUMP & SOFTENER CORP. 2410-14 Grant Ave., Rockford, Ill.



Timer actuated

An indexing plate, carrying ports and known as the Stemplate, is secured to the central stem in this new valve. The stem, in turn, is raised and lowered by a diaphragm but is free to turn with the stemplate by the action of a cam located above the diaphragm. By varying water pressure in the chamber above the diaphragm, through the operation of a timer and pilot valve, the stem is caused to rise and fall. Each rising action indexes the stemplate to positions corresponding to backwash, brine injection, rinse, and service flow.

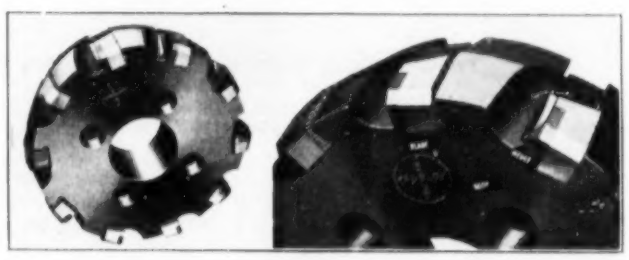
Line pressure beneath the diaphragm is employed for the lift action when pressure is released by the pilot valve. A pointer, on top of the assembly, shows the valve position. Main ports in the valve body are threaded for 2 in. pipe.

The unit is suited for automatic control of the regeneration cycle in commercial and industrial water softeners, filters, ion exchange equipment. Minimum cycle time for regeneration can be determined and the valve action set up for that interval. No further attention is required. Sediment and foreign matter are flushed clear each time the stemplate rises and indexes.

If you write maker identify as IEN - 13615

MILLING . . Insert blade cutter employs serrations to position blades

Source: MOTCH & MERRYWEATHER MACHINERY CO. 715 Penton Bldg., Cleveland 13, Ohio



Trade named Kroslok

Serrations in the body slots of this new milling cutter are both axial and radial to form a square pattern that mates with similar serrations on the rear faces of the insert blades. Wedges on the plain front faces hold the blades in position. Two basic types of alloy steel body are available for general use and for heavy duty in ferrous and non-ferrous work.

The body provides a flywheel effect. The heavy construction prevents body distortion. The cutter is available in right and left hand design. The blades are high speed steel or carbide tipped. Diameter ranges from 3 to 24 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13616

6 OUTSTANDING FEATURES of the ROBINSON Metering Pump

- Forcibly ejects fluid compounds . . . not a gravity dispenser.
- Thermostatically controlled heat . . . maximum temperature 450° F.
- ⅔ Second per ejection . . . motor driven, clutch actuated.
- Variable discharge . . . speed of ejection changed in 2 seconds without tools.
- Reduces unit costs . . . saves material, reduces rejects . . . no skilled operator required.
- Adaptable to any production technique . . . easily installed.

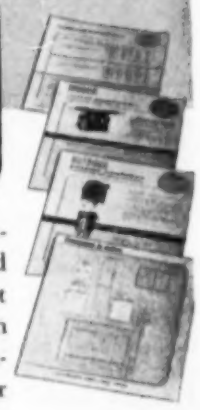
The Robinson Metering Pump has a wide variety of applications and, therefore, may be instrumental in solving some of your problems. Write us for further information.

EDWARD E. ROBINSON INCORPORATED
P.O. Box 147
95 PARK AVENUE · NUTLEY 10, N. J.
Telephone NUtley 2-4510

If you write maker identify as IEN - 13617

NEW DIMENSION SHEETS Give Complete Information

ALLIS-CHALMERS INSTRUMENT TRANSFORMERS



Just off the press — all the mechanical and electrical information you need in a convenient, completely bound set of data sheets. Gives most thorough presentation of entire line of Allis-Chalmers instrument transformers ever published. Get your copy from your nearest A-C district office or write:

Allis-Chalmers, Milwaukee 1, Wis.

A-4113

ALLIS-CHALMERS

If you write maker identify as IEN - 13618

BARBER COLMAN Wheelco Instruments

control and record heating of packaged COOLEY electric furnace

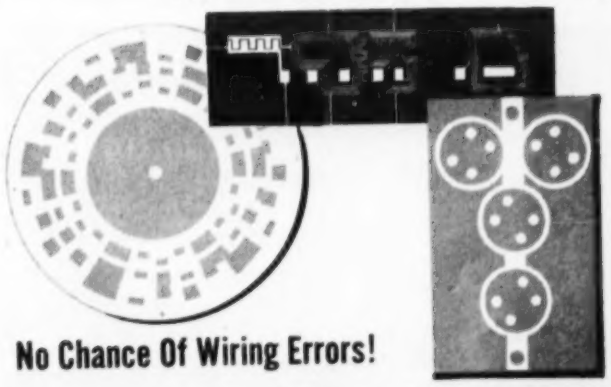
Capacilog—for accurate, dependable indication, control and permanent record of process variables.

Moderately priced, Wheelco Instruments are ideal for small, packaged furnaces. This Cooley Box-Type Furnace, installed at the Bureau of Standards, Washington, D. C., has an integrally mounted control panel for housing the Wheelco Capacilog—indicating, controlling and recording instrument for all industrial heating jobs. If your temperature or process control problem requires *hairline* accuracy plus economy . . . ask your Wheelco field engineer for a Capacilog demonstration!

Factory-trained field engineers in all principal cities

WHEELCO INSTRUMENTS DIVISION • BARBER-COLMAN COMPANY
Dept. L, 1516 Rock St., Rockford, Illinois

If you write maker identify as IEN - 13619



No Chance Of Wiring Errors!

Print your product's electrical circuit on SYNTHANE copper-clad laminated plastic and you eliminate expensive wiring and wiring errors. Fast and relatively inexpensive, this process permits quick changes in circuits without retraining assembly workers. Easily punched, sawed, and drilled, copper-clad SYNTHANE also combines these properties: high strength, light weight, low inertia, corrosion-and-heat resistance, and high insulation. To learn more about the role of copper-clad SYNTHANE in electronics, mail this coupon today.

SYNTHANE

Manufacturers of laminated plastics

SHEETS
RODS • TUBES
MOLDED-MACERATED
MOLDED-LAMINATED
FABRICATED PARTS

SYNTHANE CORPORATION
5. River Road, Oaks, Pennsylvania

Gentlemen:
Please send me information on SYNTHANE laminated plastics' use in "printed" circuits.

Name _____
Address _____
City _____ Zone ____ State _____

If you write maker identify as IEN - 13620

NEW T-J

Spacemaker

AIR CYLINDERS

Saves up to 40% Space!

Streamlined construction of the new T-J Cylinders *eliminates tie rods . . reduces head size . . .* and *saves up to 40% in mounting space!* In addition, a new high in strength is achieved with solid steel heads and heavy wall seamless steel body . . . leakproof construction . . . extra high safety factor. Cylinder walls are precision honed and hard chrome plated for long-life efficiency. Available with new T-J Super Cushion Flexible Seals. Many standard sizes and styles . . . cushioned and non-cushioned . . . for pushing, pulling, lifting, clamping or control jobs. Write for bulletin 8152. The Tomkins-Johnson Co., Jackson, Michigan.

37 YEARS EXPERIENCE T-J

TOMKINS-JOHNSON

DIRECT AIR AND HYDRAULIC CYLINDERS, CUTTERS, CLINCHERS

If you write maker identify as IEN - 13621

Abart GEARS

96 PITCH TO 5/7 D.P.
1/4" P.D. TO 18" P.D.

QUALITY GEARS, precision-cut to your specifications

Available in steel, brass, bronze, cast iron, any metal and any non-metallic gear material. All gears are custom cut to specifications.

Spur Gears • Bevel Gears • Worms • Worm Wheels • Helical and Spiral Gears • Internal Gears • Sprockets • Finishing Machine Racks

Send blueprints and specifications (or samples) for quotations on above type gears, worm and worm wheels, or sprockets—any quantity.

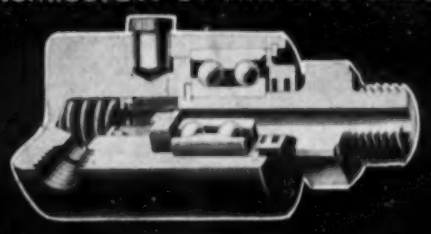
Abart GEAR & MACHINE CO.

4828 WEST 16th STREET • CHICAGO 50, ILLINOIS
Mfrs. of Gears and Speed Reducers • BIshop 2-2524

If you write maker identify as IEN - 13622

FAWICK ROTORSEAL

PROVIDES TROUBLE-FREE TRANSMISSION OF AIR AND LIQUIDS



If your machine problem requires the transmission of air or liquids from stationary to rotating machine members, a FAWICK ROTORSEAL will provide the trouble-free, practical answer.

Precision-made ROTORSEALS are available in either single or multiple passage units, producing an absolute sealing of air, liquids, or gases under pressure. They are equally effective in vacuum applications. Thousands of installations have proved the high efficiency of FAWICK ROTORSEALS.

FAWICK AIRFLEX DIVISION
FEDERAL FAWICK CORPORATION
9919 CLINTON ROAD
CLEVELAND 11, OHIO

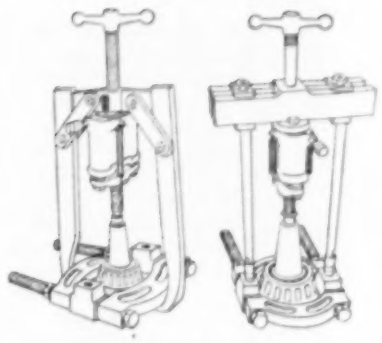
Write for ROTORSEAL Bulletin ML-6.

FAWICK Airflex
INDUSTRIAL CLUTCHES AND BRAKES

If you write maker identify as IEN - 13623

PULLING . . Work holding plates for use with hydraulic push-pull tools

Source: OWATONNA TOOL CO.
371 N. Cedar St., Owatonna, Minn.



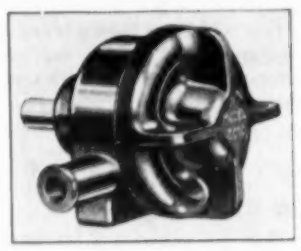
Showing two setups

One size with work diameter capacity from 5¾ to 13 in. and a second size rating 6¾ to 16 in. have been added to the company's line of work holding plates. They apply with its 50-ton Power-Twin hydraulic ram for pushing and pulling to assemble or remove large bearings, gears, pulleys, sheaves, wheels. The pulling lugs into which the push-pull legs are threaded distribute the load when extreme pressure is applied.

If you write maker identify as IEN - 13624

PUMP . . Neoprene impeller rotary, self-priming, 60 gpm. at 10 ft. head

Source: JABSCO PUMP CO.
2029-33 N. Lincoln St., Burbank, Calif.

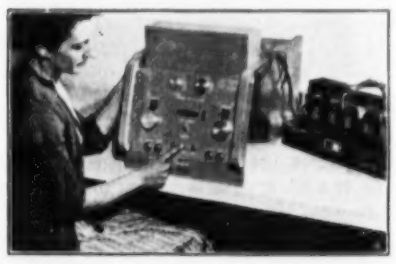


Bulletin JPS-3010

Plastic housing with ⅜-in. ports encloses a neoprene impeller in this new Model-3010 in the company's line of rotary pumps. It is suited for bottling, descaling, handling solutions such as muriatic acid, ammonia liquors. The impeller flexes to provide the pumping action. Suction lift is 15 ft. dry, 25 ft. primed. The shaft can be specified in stainless steel, Hastelloy B, Hastelloy C or pyrex Glass.

If you write maker identify as IEN - 13625

Production line tests are made in automatic sequence on completed electronic and electrical products in relation to continuity, leakage, dc. and ac. voltage, resistance, impedance by a new CTI Supertester. Adapters are plugged into the top of the unit from the equipment on test and the operator presses a starter button. The instrument then proceeds through its sequence to sound an alarm upon discovery of a fault, upon reaching a test which requires an adjustment to the product, and upon reaching the end of the test sequence itself. Color Television, Inc., 946 San Carlos Ave., Dept. IEN, San Carlos, Calif., makes the equipment for specified use.



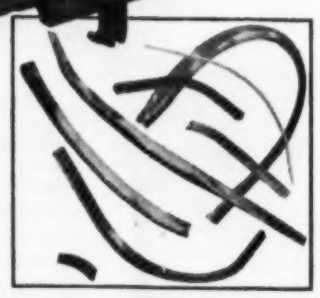
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13626

How to form Parts

in large or small quantities with economy!

Many parts now made from extrusions, brake-formed sections, sheets etc., are easily formed on HUFFORD STRETCH-WRAP FORMING MACHINES. Model A-7 illustrated is semi-automatic, exactly duplicates part profiles on low-cost, easily made dies. Push-button control simplifies operation to loading and unloading the machine.



HUFFORD offers many standard machine models for forming everything from small extrusions to full size sheets, in many metals. Write for details, outlining your forming requirements.

HUFFORD Machine Works Inc
EL SEGUNDO, CALIFORNIA

1700 E. Grand Avenue
El Segundo, California

If you write maker identify as IEN - 13627

Design Engineers' Book of the Year!

Yours for the asking! Get all the engineering data on PITCHLIGN design and performance. See for yourself how PITCHLIGN Bearings combine a series of important design features never before achieved in small roller diameter bearings. The PITCHLIGN Catalog belongs in your file! Ask for Bulletin SF-666.

Write Today!

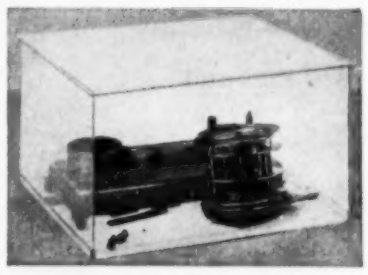
PITCHLIGN
Trade Mark
ROLLER BEARINGS

RBC
ROLLER BEARING COMPANY OF AMERICA
SULLIVAN WAY • WEST TRENTON, N.J.

If you write maker identify as IEN - 13628

THE RIGHT BOX CAN DO A JOB FOR YOU

Assembly line dust covers — any shape your equipment needs — oval, circular, oblong, square. Die, if necessary, inexpensive — don't confuse with injection molding die cost!



LITE-TUFF Standard Boxes and Containers of Non-Flam* light weight plastic—carries UL Approval, no fire hazard—are available in a wide variety of compartment arrangements.
LOW DIE COSTS ON CUSTOM MADE.

- Very tough—will not crack or shatter in normal use
- Resistant to most chemicals—samples supplied for tests
- Stainless steel hinges
- May be beautifully heat embossed
- All transparent or color combinations
- Make your own layout on our PLOT PLAN Sheets
- State your problem—let us solve it

Full Information and Plot Plan Sheets sent upon request . . . Dept. A

SHOE FORM CO., INC.
Auburn, New York

* Reg. U. S. Pat. Off.

If you write maker identify as IEN - 13629

ANYWAY YOU LOOK AT IT . .

FORT WORTH Hi-Cap High-Speed Elevator Buckets

GIVE
GREATER CAPACITY LONGER LIFE

Made of HEAVY GAUGE STEEL—

All Welded No Rivets

FORT WORTH

HI-CAP buckets are designed for high-speed elevators, although they may be used for replacements in old elevators where increased capacity is required. They are suitable for use in either chain or belt elevators and will discharge properly at high or medium belt speeds. They may be spaced on very close centers, or continuous.

WRITE FOR CATALOG SECTION 416

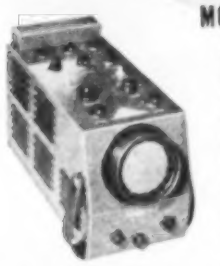
FORT WORTH STEEL & MACHINERY CO.
DEPT. 212 • 3600 McCART, FORT WORTH, TEXAS

FORT WORTH WAREHOUSES: • CHICAGO • ATLANTA • ST. LOUIS • JERSEY CITY • KANSAS CITY • LOS ANGELES • SAN FRANCISCO • MEMPHIS • HOUSTON

If you write maker identify as IEN - 13630

THE
HI-GAIN Industrial POCKETSCOPE
BY WATERMAN

MODEL S-14-A



Identified by its hi-sensitivity and incredible portability, S-14-A POCKETSCOPE now permits "on-the-spot" control, calibration and investigation of industrial electronic, medical and communications equipment. Direct coupling without peaking, used in the identical vertical and horizontal amplifiers, eliminates undesirable phase shifting. Designed for the engineer and constructed for rough handling.

Wt. 12¾ lbs. 12" x 5¾" x 7"

Vertical and horizontal channels: 10mv rms/inch, with response within—2DB from DC to 200KC and pulse rise of 1.8 μs. Non-frequency discriminating attenuators and gain controls with internal calibration of trace amplitude. Repetitive or trigger time base, with linearization from ½cps to 50KC with ± sync. or trigger. Trace expansion. Filter graph screen. Mu metal shield. And a host of other features.

WATERMAN PRODUCTS CO., INC. PHILADELPHIA 25, PA.
CABLE ADDRESS: POKETSCOPE

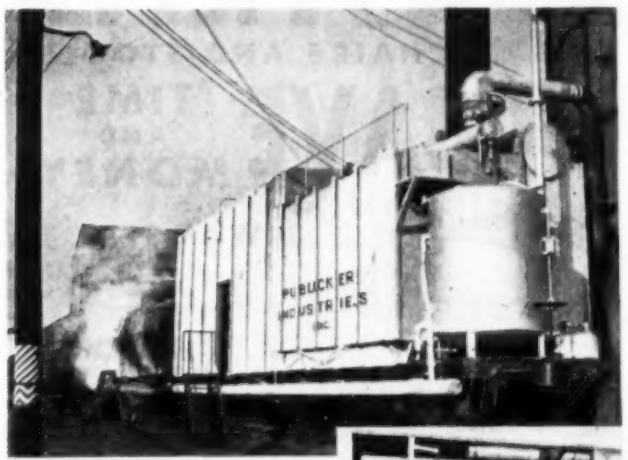
WATERMAN PRODUCTS INCLUDE:

S-4-A	SAR	PULSESCOPE
S-5-A	LAB	PULSESCOPE
S-10-B	GENERAL	POCKETSCOPE
S-11-A	INDUSTRIAL	POCKETSCOPE
S-14-B	WIDE BAND	POCKETSCOPE
S-15-A	TWIN TUBE	POCKETSCOPE

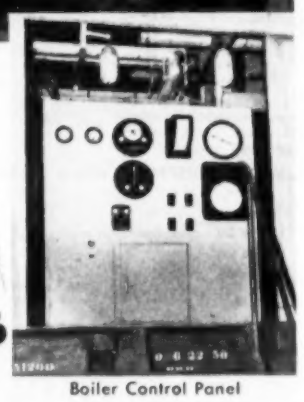
Also RAKSCOPES, LINEAR AMPLIFIERS, RAYONIC TUBES and other equipment

WATERMAN PRODUCTS

If you write maker identify as IEN - 13631



Ready to roll, or work —on short notice



Boiler Control Panel

Steam plant on wheels ...works for PUBLICKER INDUSTRIES

When expanding operations created a need for additional steam power for short periods and at various locations in their Philadelphia plant, engineers of Publicker Industries, Inc., solved the problem by designing and building the first and only portable steam plant of its type ever devised. And to insure that the mobile steam unit would conform to specifications of the American Association of Railroads for moving over main lines, Pennsylvania Railroad engineers cooperated in designing the cab.

Consisting of a shop-assembled, B&W Integral-Furnace Boiler, Type FM, mounted atop a standard flat car, the unique plant produces 20,000 lb of steam per hr at 250 psi maximum pressure. Auxiliary equipment includes a feedwater heater, pumps, starting gas, a water-treating unit, and outside clips for service connections. Currently being utilized to clean tanks, operate steam pumps, and supply heat, the plant-on-wheels is controlled by a single engineer . . . and operates under automatic control. It requires changing of outside connections only—electrical, water, oil, and drain—when it is moved.

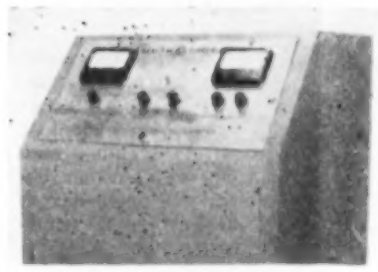
This versatile, self-contained B&W Integral-Furnace Boiler, Type FM, is available in a range of steam capacities from 2900 to 28,000 lb per hr at pressures between 15 and 235 psi. Total steam capacity of units now in service or on order for more than 50 different industries, utilities, and other users, has topped 6½ million lb per hr.

BABCOCK & WILCOX
BOILER DIVISION
G-602

If you write maker identify as IEN - 13633

TESTING . . Mass spectrometer for quantitative element analysis

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.



Panel mounted controls

New instrument has been designed for use in the gas, petroleum, pharmaceutical and chemical fields to cover an approximate range of 1 to 100 mass units. A programming device permits automatic and repetitive continuous scanning of the spectrum, manual scanning or selection of peak or peaks of a given mass and, with minor modification, automatic monitoring of one or more peaks in sequence. The principle of ion resonance is employed and a sample inlet system has been designed to permit direct connection to a stream or process line for continuous sample introduction.

Ions are formed within the magnetic field of the instrument instead of in a separate ion chamber. Ions of a specific mass are caused to follow a spiral path to a collector by applying a super-imposed radio frequency electrostatic field. All others are drawn out of the analyzing region by controlling the frequency. Thus the signal received by the collector is indicative of the quantity and mass of the ions present. A complete spectrum is observed as the frequency is varied.

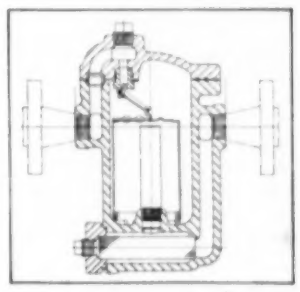
The analyzer tube utilizes the resonance phenomena to separate items of differing mass units. A permanent magnet produces the required steady magnetic field. A radio frequency oscillator provides the necessary field to resonate the ions. Output of the instrument can be read directly on a meter located on the control panel or can be supplied to additional external recording equipment.

Dimensions are 24 by 30 by 47 inches. Weight is 750 pounds. Operation is on 110-volt 60-cycle ac. and on a water supply connection to a diffusion pump that requires 2 to 5 gph. for cooling purposes. A blower rated at 300 cfm. maintains correct operating temperature.

If you write maker identify as IEN - 13634

TRAP . . Inverted bucket, for steam, to 600 lb. pressure, 3,100 lb. per hr.

Source: ARMSTRONG MACHINE WORKS
888 Maple St., Three Rivers, Mich.



In-line connections

Body and cap of this new No. 983 steam trap are made of cast steel. The inlet tube, threaded into the inner base above the strainer compartment, is wrought iron. The valve and seat are heat treated chrome steel. The guide pin assembly, valve lever, bucket, valve retainer are stainless steel. A cast iron weight is secured to the bucket. The gasket between body and cap is a graphite asbestos unit suited to the intended service.

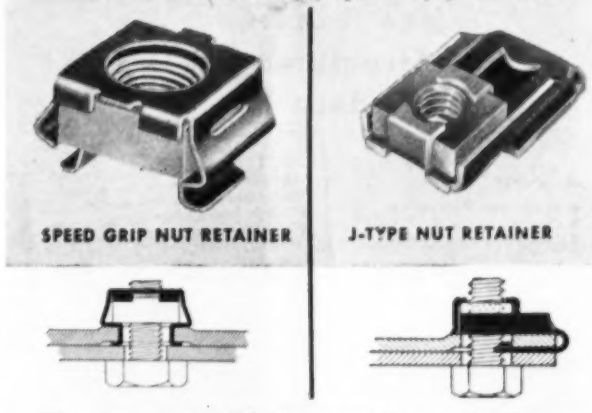
The trap is available with connections measuring ½, ¾ or 1 in. in threaded, flanged or socket-weld design. List price, with threaded connections, is $90.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13635

TINNERMAN *Speed Grips*®

. . . snap into place by hand, are self-retaining. Save time and material, speed up production!



Tinnerman nut retainers are making production savings of more than 50% for manufacturers everywhere. Welding, staking, riveting operations are out with these self-retaining fasteners. Ideal for blind locations, built-in floating alignment prevents cross threading. No retapping of paint-clogged threads. Tinnerman nut retainers can be applied after painting. Easily attached by hand; no need for special tools, jigs or skills. Available in a full range of sizes for light or heavy attachments. For complete details write:

TINNERMAN PRODUCTS, INC.
Dept. 12, Box 6688, Cleveland 1, Ohio

If you write maker identify as IEN - 13636

SOUTH BEND Drill Presses

14" Economy Model Drill Press

14" Precision Drill Press

For Efficient Production

South Bend Drill Presses offer many advantages for production machining. They are ruggedly built to give long, dependable service on heavy work. Yet, their accuracy and responsive handling make them ideal for light, fast work. All are built with typical South Bend quality and skill . . . Economy and Precision Bench Models (as illustrated) also, floor types and multiple spindle production units. *Write today for catalog.*

SOUTH BEND LATHE
South Bend 22, Indiana • *Building Better Tools Since 1906*

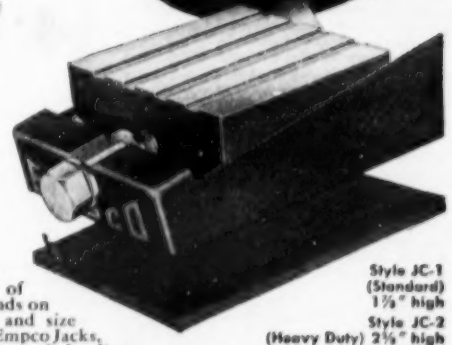
If you write maker identify as IEN - 13637

QUICK, ACCURATE MACHINE LEVELING

WITH VIBRATION ABSORBING MOUNTING PADS

- *Provides Accurate Adjustment*
- *Reduces Vibration and Noise*
- *Lower and Sturdier*
- *Self-Aligning*
- *Two-Way Control*
- *Smooth Slipways*

Empco JACK



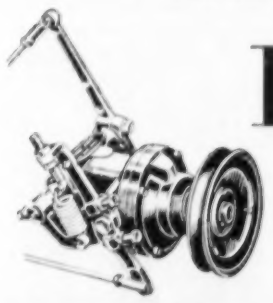
Empco Jacks enable you to meet hurry-up demands for relocation of machinery by giving you the fastest, easiest, most accurate machine leveling ever known: you simply raise or tilt machine sufficiently to allow the Empco Jacks to be slipped under base. The number of jacks required depends on weight of machine and size of base. Once set on Empco Jacks, the entire operation of leveling and maintaining equipment level is quickly done. By applying a wrench to the "hex" head of adjusting screw, an adjustment is obtained either up or down until your level indicator reads "zero." Write for specifications and prices today.

Style JC-1 (Standard) 1⅞" high
Style JC-2 (Heavy Duty) 2⅝" high

EMPCO PRODUCTS

THE ENTERPRISE MACHINE PARTS CORPORATION
2737 JEROME AVENUE • DETROIT 12, MICHIGAN

If you write maker identify as IEN - 13638



now

ONE GOVERNOR ONE MODEL . . .

for 9 out of 10 industrial and farm engines

PIERCE LONG RANGE UNIVERSAL GOVERNOR

● Instant variable speed selection and accurate engine control at any speed setting within 1200 to 2600 RPM. Higher and lower ranges obtainable by simple change of pulley. Also "constant speed" operation.

● Accurate, dependable speed control for engines operating corn shellers, drag lines, hoists, arc welders, trucks and tractors with power take-offs, etc.

Write for Complete Information

DEALERSHIPS AVAILABLE

List Price $39.50 Pulley extra

THE PIERCE GOVERNOR COMPANY, INC.
1636 Ohio Avenue, Box 1000, Anderson, Indiana, U. S. A.

WORLD'S MOST EXPERIENCED GOVERNOR MANUFACTURER

If you write maker identify as IEN - 13639

Get proof of vibration-control with even one package

You get ten economical 18 x 18" ISOMODE* PADS in a standard stockroom package. At the recommended Pad loading of 50 lbs per sq. in., this gives you enough mountings for up to 80 TONS OF MACHINERY. Simply cut to required size, place the pads under legs or base—and you begin to see proof of vibration-control with benefits like these:

Machines stay put without bolts or lag screws . . . Noise diminishes . . . Even punch press shocks are absorbed . . . Machines stay tighter longer . . . Less cracks in floor and building.

Write for prices and detailed Bulletin No. 415.

*Trade Mark

ISOMODE* PADS are produced by

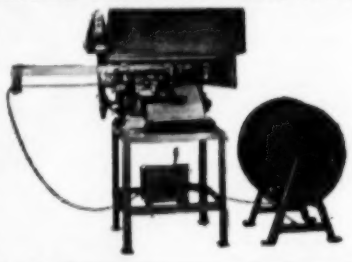
THE MB MANUFACTURING COMPANY, INC.
1064 State Street, New Haven 11, Conn.

If you write maker identify as IEN - 13640

Measure, Cut and Strip Insulated Wire

IN ONE SPEEDY OPERATION

ON ARTOS *Automatic* MACHINES



Does your production require cutting and stripping of insulated electric wire, cord, cable, etc.?

You can produce finished leads *much faster* . . . as many as 3000 per hour in 15-in. lengths . . . on this Artos Automatic Machine. Substantial time savings are obtained over the best manual or semi-automatic methods.

Operation is fully automatic—wire is taken from the reel, measured, cut to length and stripped at one or both ends. Unskilled help can handle the machine. Set-up is easy for different wire types and lengths.

MODEL CS-6E CAPACITY

FINISHED PIECES PER HOUR—From 3000 per hour up to 15 in. lengths to 500 per hour in 64-97 in. lengths.
MAXIMUM STRIPPING LENGTH—1½ in. at each end (greater stripped lengths are special).
MAXIMUM CUTTING LENGTH—97 in.
MINIMUM CUTTING LENGTH—2 in. (also as short as ⅞ in. under certain conditions).
TYPES OF WIRE HANDLED—Solid or stranded single conductor wires, parallel cord, heater cord, service cord, etc.
MAXIMUM WIRE SIZE—No. 10 stranded or No. 12 solid.

Other Artos Machines

The complete line of Artos automatic wire cutting and stripping machines will handle *cut lengths* from 1 in. to 60 ft., *stripped lengths* to 6½ in. at one end and 8½ in. at the other, wire from No. 12 to No. 000 gauge, and up to 3600 pieces per hour. Ask for recommendations on your problems.

WRITE FOR BULLETIN

Get the complete story—write for Bulletin 35-C on Artos Model CS-6 machines.

Automatic Wire Cutting and Stripping

ARTOS ENGINEERING CO.
2749 S. 28th St. • Milwaukee 46, Wis.

If you write maker identify as IEN - 13641

RUGGED GUARDIAN of Persons and Property

Bothersome intruders may roam your grounds . . . property appearance can be spoiled . . . employees need accident protection. These are jobs for Continental, the better installed, longer lasting chain link fence. Get peace-of-mind and protection permanence by contacting your nearest Continental sales office now.

CONTINENTAL STEEL CORPORATION
Kokomo, Indiana
Send me FREE copy of "Planned Protection"
—complete manual on property protection.

Name
Address
City State

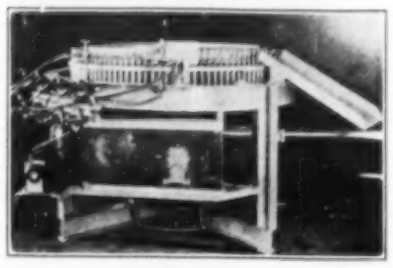
*TRADE MRK. REG. U.S. PAT. OFF.

CONTINENTAL STEEL CORPORATION

If you write maker identify as IEN - 13642

BRAZING . . Rotary machine assembles steel cups on brass stems

Source: WALTZ FURNACE CO.
1903 Symmes St., Dept. 6, Cincinnati 6, Ohio



Built to order

An operator, standing in front of this new machine, places a brass stem work piece, with a stainless steel cup in place on one end, in each empty holder as it comes around on a motor driven rotary table. A ring of silver solder with the required flux is placed in the cup and the parts pass through flames from oxygen and propane torches.

The solder flows into place and then the work pieces are carried under a water spray and around to a discharge chute where they lift from the holders to slide out of the machine. The table rotating motor has a variable speed control to adjust production rate. The machine will braze 1,000 pieces per hour.

If you write maker identify as IEN - 13643

LUBRICATING . . Paste type fluid releases molded plastics from molds

Source: CHEMICAL DEVELOPMENT CORP.
10 Endicott St., Danvers, Mass.

It fills the mold pores

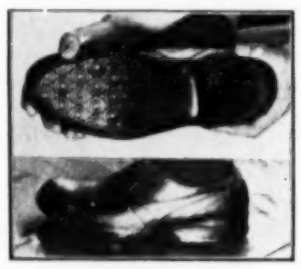
Mold Release B-2 is a new paste type fluid for use primarily on porous or semi-porous molds including wood, plastic, plaster of Paris, aluminum. Application is with a cloth or brush followed by rubbing down if a practically invisible thin coating is required. It releases molded work made of polyester, epoxy and similar plastic resins so prying and hammering, particularly on large parts, is not required.

The lubricant is insoluble in the resin and will not interfere with correct curing. It dries quickly, has a high flash point and does not require a red label for shipment or storage.

If you write maker identify as IEN - 13644

PROTECTING . . Neoprene overshoe, non-slip suction cup sole and heel

Source: TINGLEY RUBBER CORP.
901-5 Ross St., Dept. I, Rahway, N. J.



Nine ounces each

New sole and heel that will not slip on a wet, greasy or icy surface is now a part of the neoprene overshoe previously described IEN-3898-53. The neoprene rubber is molded in one piece with no fabric lining. The smooth interior slips on and off easily. The overshoe can be turned inside out for thorough washing. Elasticity in the material prevents pulling off accidentally at the heel. Three sizes fit shoe sizes from No. 6 to No. 12.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13645

MET-L-WOOD
METAL BONDED TO PLYWOOD

Has Hundreds of Structural Uses in Modern Plants

To Name a Few:

- Walls and Partitions
- Doors
- Counters and Shelves
- Traffic Panels
- Truck Bodies (Patented "Ribless" Construction)
- Truck Body Panels
- X-Ray Rooms
- Moisture-Vapor-Proof Rooms and Containers
- Decorative Finishes

Met-L-Wood is metal bonded to plywood—permanently. Many metals, woods, thicknesses, shapes, finishes are available to meet YOUR requirements.

Met-L-Wood stock panels and prefabricated units are a challenge to modern industrial engineers and designers because of their multiple possibilities in economical, structurally-sound designs in hundreds of varied uses. Best start toward thinking in terms of Met-L-Wood design opportunities is to send for the Bulletin described below . . . Met-L-Wood Engineering Service is available without obligation on specific problems.

SEND FOR THIS BULLETIN ON MET-L-WOOD USES AND ADVANTAGES

Quick facts, with illustrations and diagrams on Met-L-Wood applications, types, possibilities. Sent without obligation on request.

MET-L-WOOD CORPORATION
6755 West 65th Street • Chicago 38, Illinois
"Met-L-Wood . . . *opening new horizons to structural designers*"

If you write maker identify as IEN - 13646

Can Bridgeport INNER-SEAL solve your sealing problem?

Industry is constantly finding new applications for INNER-SEAL, the flexible, tough gasketing material. It's used for insulating, cushioning, gasketing in the automotive, railway and refrigeration fields. It's also used for countless other purposes in manufacturing—wherever sealing problems occur.

INNER-SEAL's patented construction—spring steel molded in live sponge rubber—makes an effective, pressure-tight seal. Neoprene coated INNER-SEAL is waterproof . . . resists sub-zero and tropic temperatures, sunlight, humidity, grease, oil and abrasion. INNER-SEAL fits perfectly into corners, around curves . . . lasts for years.

INNER-SEAL is stocked in standard dimensions and colors. Heavy-duty type available in black. Special types or colors made to order.

Perhaps INNER-SEAL can help you solve your sealing problem—and make *your* product better! Investigate INNER-SEAL!

Write today for **FREE SAMPLES** *and complete information.*

BRIDGEPORT FABRICS, INC., BRIDGEPORT 1, CONN.

If you write maker identify as IEN - 13647

AJUSTRITE®
CHAIRS AND STOOLS
SAVE TIME AND MONEY

3 WAYS

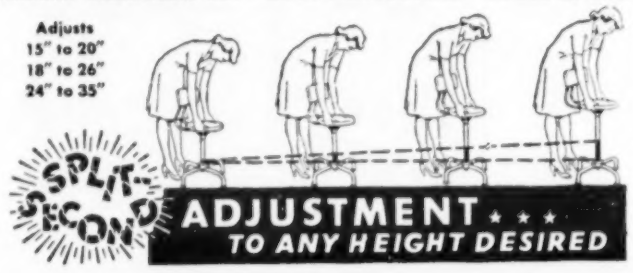
1. Avoids confusion and lost time at start of each period, enables each worker to adjust seat height to fit own requirements.
2. Saves time of supervisors, foremen and maintenance men. Relieved of locating and adjusting seats for each employee.
3. Sturdy construction and special features eliminates maintenance costs—save as much as $3.00 per unit per year.

Sizes and models to meet any requirement. No tools needed—just lift seat to desired height—holds securely where upward lift stops. 2-way backrest adjustment gives support to stop fatigue. Reduces absenteeism.

FREE TRIAL
Try an Ajustrite for 30 days without obligation. The quick, easy, adjustment will surprise you.

AJUSTO EQUIPMENT CO. • 2144 Madison Ave. • Toledo 2, Ohio

Adjusts
15" to 20"
18" to 26"
24" to 35"



If you write maker identify as IEN - 13648

Investigate the Advantages of the NICE LINE!

FROM high quality, close tolerance "ground all over" Precision Ball Bearings. . . . .

TO low cost "unground" Ball Bearings of inexpensive design and construction.

Precision, Semi-Precision and Unground Standard and Special Ball Bearings Since 1902.

WRITE FOR CAT. NO. 150

NICE BALL BEARING CO.
NICETOWN • PHILADELPHIA • PENNSYLVANIA

If you write maker identify as **IEN - 13649**

IN GEROTOR HYDRAULIC PUMPS... AND MOTORS... THE GEROTOR* MAKES THE DIFFERENCE!

The patented Gerotor principle is represented by a pair of gear-shaped elements, one within the other. In pumps, power is applied through the shaft to the inner Gerotor and is transmitted in the closed mesh region to the outer Gerotor; in motors, the same principle operates in reverse.

Each tooth of the inner Gerotor is in sliding contact with the outer Gerotor at all times, providing continuous fluid-tight engagement at very low contact speed. The contact points revolve only once in seven to nine revolutions, depending on the type of unit. This reduced friction permits higher shaft speeds, assures longer life. Opening and closing of chambers between the teeth is gradual across long ports, eliminating sudden shock and excessive turbulence, and reducing pressure variations found in conventional gear pumps. In Gerotor hydraulic pumps and motors, the Gerotor principle produces high volumetric and mechanical efficiency.

Whatever your need in hydraulic pumps or motors, consult the Gerotor May engineers. Write for free literature.

GEROTOR MAY CORP., BOX 86, Baltimore 3, Md.

GEROTOR
HYDRAULIC PUMPS & MOTORS

*Gerotor is not just a name . . . it's the heart of the finest hydraulic pumps and motors made.

If you write maker identify as **IEN - 13650**

Announcing a new combination by two leaders in materials handling, to serve you better

MHS Louden

Mechanical Handling Systems has purchased Louden Machinery Company, Fairfield, Iowa, manufacturer of monorail and overhead crane equipment.

With this acquisition, a new team with greater capabilities for service to all industry has taken the field.

Louden is a firm with an 86-year history of quality manufacturing. Louden overhead cranes, monorail, and special equipment are speeding materials handling and cutting costs in thousands of plants.

Mechanical Handling Systems has been designing, engineering and building conveyor systems of all types, in many industries, for 34 years. The MHS field includes simplest installations and multi-million-dollar automated plants.

Together, Mechanical Handling and Louden complement each other in products, experience, engineering, manufacturing facilities and skills, and field manpower.

To American Industry the new combination brings a broader, more advantageous, more valuable service in the materials handling field.

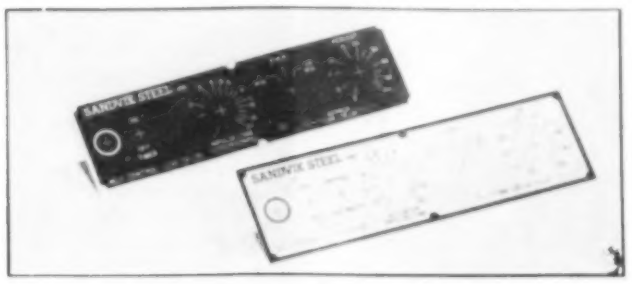
Present sales offices and organizations of the two companies remain separate and independent.

THE LOUDEN MACHINERY COMPANY
Fairfield, Iowa

If you write maker identify as **IEN - 13652**

NAMEPLATE . . Contract service to supply inexpensive plates quickly

Source: HENRY G. DIETZ CO.
12-18 Asteria, Dept. IEN, Long Island City 2, N. Y.



Negative or positive reproduction

The company announces availability of its photo-chemical process and equipment for production of nameplates, instruction plates, lubrication charts, permanent signs, instrument scales in desired sizes to a present maximum of 12 by 14 inches.

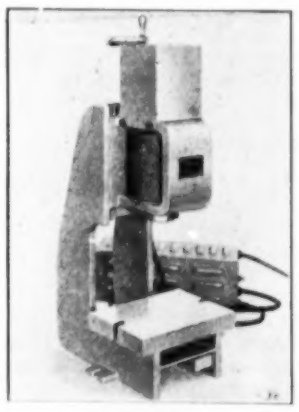
The process starts with simple art work preparation by the user or the company and production of a photographic negative. The negative is employed in the actual process to produce one or any number of finished plates on any non-porous surface in a variety of available colors. Aluminum foil backed with a bonding material can be employed also. Ten reproductions can be made at a unit cost of about 1½ cents per sq. in., nearly as cheaply as a quantity of 500.

The image is not destroyed by flame when it is reproduced on a non-combustible material. It will not fade when made on aluminum. It will not chip, crack or peel off. Very fine details can be reproduced. Each finished plate is coated with transparent plastic against abrasive contact.

If you write maker identify as **IEN - 13653**

PRESS . . Electric impact unit to mark, stake, stamp, rivet, swage

Source: BLACK & WEBSTER INC.
443-45 Watertown St., Dept. N-8, Newton 58, Mass.



Non-magnetic spindle

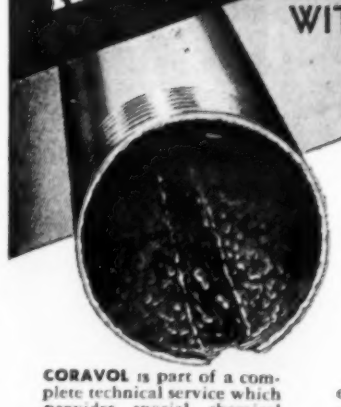
Model C is a new unit in the company's Electropunch line, previously described IEN-13263-52. It delivers an impact blow that is adjustable from light action to 10,000 lb. at a maximum rate of 75 blows per minute. The action is supplied by an electric solenoid. The press operates in connection with a selenium rectifier to employ dc. in the solenoid coil and to permit plugging into a 110-volt ac. outlet. Operation can be actuated by momentary electric contact or automatically by a limit switch when work is inserted under the ram.

Ram to table, with the stroke down, ranges from 1¼ to 6¾ inches. Tool shank hole in the ram is ⅝ in. in diameter by 1 in. in depth. The power stroke is 2 inches. The machine mounts a work table measuring about 8 by 6 inches. It is about 26 in. in height with the head at its top position. Solenoid armature and spindle operate in a 3-in. honed bronze bearing.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 13654**

Stop CORROSION in your Steam System WITH CORAVOL



When fed to your steam system, **CORAVOL:** (1) *prevents* corrosion in steam and condensate lines, (2) *cleans out* clogging rust deposits resulting from previous corrosion. Thus, **CORAVOL** protects lines, increases the effectiveness of heat transfer surfaces, restores original capacity of lines and the operating efficiency of valves and traps.

CORAVOL is part of a complete technical service which provides special chemical formulas for:
Boiler Feed Water . . . Foam Prevention . . . Hot Water Supply . . . Refrigerating Brine . . . Cooling and Condenser Water . . . Rapid Scale Removal . . . Coagulation . . . Algae Control.

Write TODAY to Western Chemical Company, 715 Washington Street, Kansas City, Missouri—for complete FREE data about the **CORAVOL** process.

WESTERN CHEMICAL CO.
715 WASHINGTON KANSAS CITY, MO.

If you write maker identify as **IEN - 13655**

FOR THE BIG CLEANING JOBS IN INDUSTRY

7½ HP

This is the new heavy duty Spencer Portable Vacuum cleaner, reduced in height so that it will go through any factory door or onto most elevators. Its 7½ HP will supply more than enough vacuum power for two operators working at once. The dirt capacity is large—removable can rolls on casters. It will pick up heavy metals, reclaim foundry sand, remove hot materials and clean the largest factory areas in record time. Smaller machines for office and normal industrial service. Ask for Bulletin No. 102 and 112.

THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT
SPENCER HARTFORD
466-M

If you write maker identify as **IEN - 13656**

For Precision Flatness and Finish... on Metals, Ceramics, Quartz and Plastics...

USE A CRANE LAPMASTER

With a Lapmaster you can lap different parts in one cycle—lap a wide range of parts of different materials in short or moderate production—lap identical parts at tremendous production rates and maintain flatness to one light band (.0000116"), surface finish to 2 or 3 RMS. *Production lapping may be the solution to your problem. Get all the facts.*

Full facts on Lapmaster production lapping—Flatness interpretations available in two illustrated booklets. They are yours for the asking.

JOHN CRANE
CRANE PACKING COMPANY
LAPMASTER DIVISION
1815 CUYLER AVENUE • CHICAGO 13, ILLINOIS

If you write maker identify as **IEN - 13657**

TREET-ALL the HEVI DUTY *Multi Purpose* FURNACE for TOOL ROOM AND EXPERIMENTAL HEAT TREATING

With a maximum temperature of 1850° F., the TREET-ALL can easily handle your scale free hardening, carburizing, dry cyaniding and silver brazing.

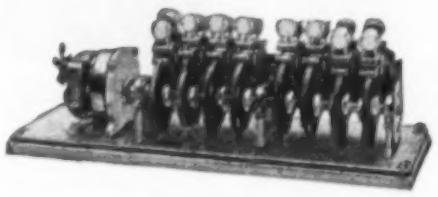
The alloy muffle and gasketed door form a tight seal which simplifies atmosphere control. The furnace, quench tank, cabinet and controls form a compact, completely wired unit.

Write for Bulletin HD-1147-BB

HEVI DUTY ELECTRIC COMPANY
HEAT TREATING FURNACES HEVI-DUTY ELECTRIC EXCLUSIVELY
DRY TYPE TRANSFORMERS — CONSTANT CURRENT REGULATORS
MILWAUKEE 1, WISCONSIN

If you write maker identify as **IEN - 13658**

8 MILLION Automatic Operations without failure*



with

STALEY TIME CYCLE CONTROLLERS

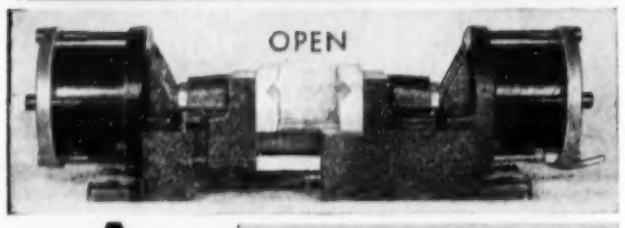
Staley Time Cycle Controllers give you exact, automatic control for sequence timing of electric circuit operations . . . eliminate the need for time delays and other complicated electrical equipment. Accurate, dependable, trouble-free service is assured by the use of positive-contract Staley Metallic Mercury Switches. Lightweight, rugged design *plus* ample power for continuous long period operation. Write today for descriptive bulletin. Specify Dept. IEN-405.

* Constant, *uninterrupted* service for periods of five years or longer attest to the trouble-free performance of Staley Time Cycle Controllers.

ELECTRIC SWITCH CORPORATION
1304 E. Eleventh Street · Columbus, Indiana

If you write maker identify as **IEN - 13659**

BLACK "CENTR-FINDER" VISE



A *Precision* TOOL

designed to locate centers or other pre-determined points regardless of shape or varying sizes of parts within .001" horizontally or vertically.

Vise jaws travel on guides—actuated by opposed double-acting cylinders—synchronized by mechanical means. Force exerted is all straight line. Clamping pressures up to 2000 pounds. No pressure exerted through synchronizing mechanism. Working range 0 to 4". For centering, drilling, chamfering, hollow milling, deburring, reaming and many other production operations.

write **FOR BULLETIN**

BLACK DRILL CO., INC. • 1378 E. 222nd St. • Cleveland 17, Ohio

If you write maker identify as **IEN - 13660**

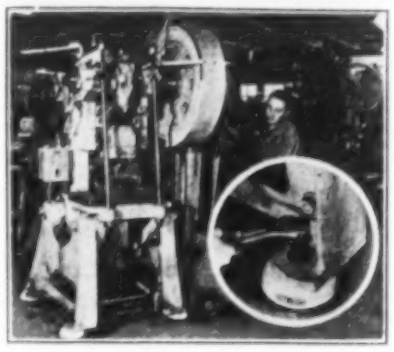
Industrial CRANES *Improve Your Profit*

INDUSTRIAL CRANE & HOIST CORPORATION
(formerly Industrial Equipment Co.)
321 NORTH ADA STREET CHICAGO 7, ILLINOIS
Overhead Cranes • Jib Cranes • Monorail Systems
Crane Runways
Representatives in Principal Cities

If you write maker identify as **IEN - 13661**

ISOLATING . . Vibration insulator replaces anchor bolts under machines

Source: BARRY CORPORATION
1011 Pleasant St., Watertown 72, Mass.



Mobilizes equipment

Machinery and plant equipment, subject to vibration, can be mounted on the company's new Series-LM3 and LM5 Barrymounts so it is no longer necessary to bolt them to the floor. The new isolators absorb shock, prevent "walking". They are adjustable, through ½ in., for height so a machine can be leveled after it has been equipped with the units and set upon a floor. Load capacity per unit is to 4,200 lb. in the overall line which ranges in load capacity from 1 oz. to 12,000 pounds.

If you write maker identify as **IEN - 13662**

ADHESIVES . . Silicone base fluids, pressure sensitive, will not harden

Source: DOW CORNING CORP.
P. O. Box 592-A, Dept. IEN, Midland, Mich.

Technical data upon request

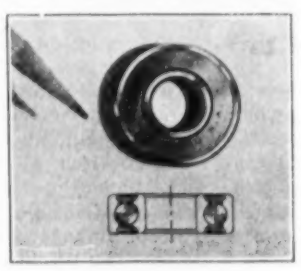
Glass tapes, with sufficient silicone pickup for adhesive strength of 600 gm. per in. at room temperature, show strength of 750 gm. at 100 deg. and 1,400 gm. at 140 deg. C. when coated with the new XC-269 or XC-271 adhesive. Both new materials are supplied with xylene as the solvent. Viscosity is suited for knife coating. It can be decreased, for spraying or dipping, by adding more solvent.

Both adhesives remain serviceable in a temperature range from minus 55 to plus 250 deg. C. Shelf life is 3 to 6 months. Both have excellent dielectric properties and good resistance to attack by moisture, weathering, aging.

If you write maker identify as **IEN - 13663**

BEARING . . Commercial ball unit plastic seals, 3/16 to 1 in. bore

Source: SCHATZ MFG. CO.
6760-64 Fairview Ave., Poughkeepsie, N. Y.



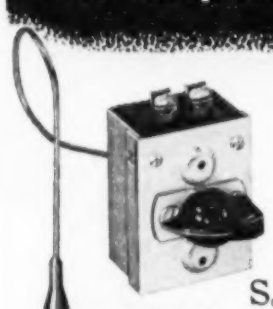
To specification

Type CS-3258, with new plastic seals to retain the lubricant, is now available for use in place of more expensive precision bearings under favorable conditions. The bearing has hardened races, ground finish. It is made in English and metric sizes in outside diameter from ⅝ to 2.047 inches. Speed is to 10,000 rpm. in the recommended range.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 13664**

New Snap Action Thermostat



- **High Capacity**
- **Small Size**
- **Low Cost**

Series F "Space Saver" thermostats provide high capacity . . . up to 5000 watts, in limited installation space . . . length 2¾", width 1⅛". Contact mechanism is single pole, double break, of snap action type—actuated by expansion and contraction of a stable liquid which transmits motion to an expansible diaphragm. Series F thermostats are designed for use where the manufacturer normally supplies dial. However, standard dials are available. Standard shaft ¼" diameter flatted to .156".

RATINGS

Minimum Temperature 40°F
Maximum Temperature 550°F

Standard Ranges:
40°—100°F 50°—250°F
60°— 90°F 150°—550°F

Special ranges to specification
Screw type or Ark-Les terminals

Motor Rating:

	Running	Locked
Volts	Amp.	Rotor
120	10.2	61.3
240	6.5	39.0

Contact Rating:
22 amp., 120-240 Volt, A.C. only non inductive

Descriptive folder #3259 sent on request.

THE WILCOLATOR COMPANY
1001 Newark Avenue, Elizabeth, N. J.

If you write maker identify as **IEN - 13665**

Moving or Storing is Rapid, Convenient and Inexpensive with

IRONBOUND SEMI-LIVE SKID PLATFORMS

Ruggedly built with capacities up to 2500 lbs. These units are quickly made mobile with the use of low cost lift jacks . . . One of the methods that Ironbound engineers use to increase production and conserve space at low cost.

SEMI-LIVE SKID WITH BOX TOP

. . . permanently attached or removable. Also available with many other superstructures to "Short-Haul" your products thru production or into storage. Useful in hundreds of spots in every plant.

THE IRONBOUND "SAFETY-SKID" WITH ROUND CORNERS

Ironbound construction assures long hard use with complete safety to product and operator. Still the time proven method for handling of materials efficiently and economically.

IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
50 HOFFMAN PLACE • HILLSIDE, N. J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

If you write maker identify as **IEN - 13666**

TEMPERATURE RECORDING CONTROLLER

Recording mechanism also operates control switch. Five Ranges of 150, 350, 450, 650 and 1000 deg. F.

PARTLOW
RECORDING-CONTROLLER
(Wall type illustrated)

Wall Type	$100
Flush Type	$115

RECORDER ONLY

Wall Type	$73
Flush Type	$88

You install the sensitive bulb of this recording-controller at ahe location where you desire temperature control. Then you adjust the instrument to the desired control point. From there on operation is automatic, the switch actuating a solenoid or motor-operated valve, electric-heating unit, or driving motor without further attention. At the same time instrument traces a continuous record on its circular motor-driven or clock-driven chart. The switch connects direct to the power-operated equipment for loads within its capacity or operates through a relay for any larger load. It is available for operation normally "on," normally "off" or in single pole, double throw arrangement.

You can purchase the complete recorder-controller assembly for automatic control or we can omit the control switch to provide you with an instrument to record for manual control.

Recording-Controller details in Bulletin 901-A
Recorder details in Bulletin 900-A

THE PARTLOW CORPORATION
4 CAMPION ROAD NEW HARTFORD, N. Y.

If you write maker identify as **IEN - 13667**

Now any shop can do precision boring jobs in the drill press dept.

with

Belock precision bore bars *...

You can now convert any drill press into a precision boring machine and hold to jig bore tolerances

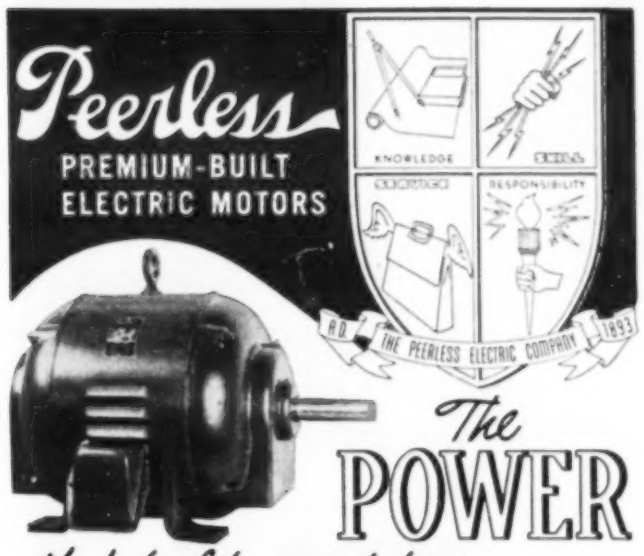
This rigid boring tool steps up production rate at least 10-1 and gives greater accuracy with long life. Being completely rigid, the carbide cutting edges will cut up to ½" of material, doing a bore and c'bore in one operation. Simple "pilot fixture" replaces present expensive jigs.

*Patent applied for

Write NOW for information folder.

Belock Instrument Corporation
COLLEGE POINT · NEW YORK

If you write maker identify as IEN - 13668



The POWER *that builds reputations*

No greater compliment can be paid a motor than to call it Peerless. The men who build, sell and service America's finest mechanical equipment know what we mean.

"Service" by our representatives; "knowledge" of Peerless engineers; "skills" of its manufacturing personnel; and, "responsibility" of Peerless top management result in a motor with that extra something.

Yes, The Peerless Electric Company is proud to build motors with that extra something . . .

Something we call the Power That Builds Reputations.

THE PEERLESS ELECTRIC COMPANY

MOTORS
FANS
BLOWERS

Peerless Electric

1415
W. MARKET ST.
WARREN, OHIO

If you write maker identify as IEN - 13669

for jobs where you "can't take chances"...

SNAP-LOCK TRADE MARK

again proved dependable for controlling repetitive cycles at 60 passes per minute

This Zagar acoustical wall tile drilling machine employs 5 Snap-Lock limit switches—three automatically controlling movements of the 96 spindle drill head and two actuating the hydraulic system operating the work table.

Zagar Tool Inc., Cleveland, O., manufactures drill heads, drilling and broaching machines. After 10 years experience with Namco Snap-Lock limit switches applied to a wide variety of large and small machine tools, Mr. Frank Zagar, General Manager states—

> *"for the fast, exacting and dependable controls in our machines, we can take no chances—we recommend Snap-Locks to customers all over the country."*

This confidence is typical of expressions from machine tool builders, 90% of whom have adopted Snap-Locks as standard built-in equipment—some using more than 200 units on a single installation.

You can depend on Snap-Lock—Ask your Engineers to contact ours. Specifications Bulletin EM-51.

Heavy Duty Features of SNAP-LOCK Limit Switches

built BY machine tool builders FOR machine tool builders

- Separate safety walled enclosures for electrical and mechanical sides.
- Hardened steel parts, rugged, compact.
- Heavy insulation, oil and dust resistant case.
- Positive lock in "on" and "off" positions.
- Single pole normally open and closed, double break contact arrangements.
- Self wiping coin silver contacts.
- Wide variety of standard mountings and operating levers.

ELECTRICAL MANUFACTURING DIVISION

The NATIONAL ACME CO.

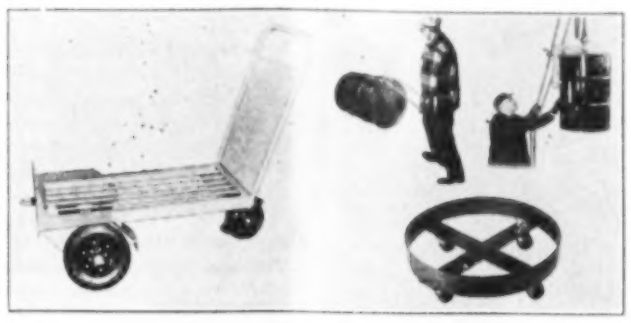
178 EAST 131 STREET, CLEVELAND 8, OHIO

Acme-Gridley Bar and Chucking Automatics: 1-4-6 and 8 Spindle • Hydraulic Thread Rolling Machines • Automatic Threading Dies and Taps • Limit, Motor Starter and Control Station Switches • Solenoids • Contract Manufacturing

If you write maker identify as IEN - 13671

HANDLING . . Hand truck, dolly and lifters for roof materials

Source: LEXSUCO INCORPORATED
4813-17 Lexington Ave., Cleveland 3, Ohio



Particularly for roofing operations

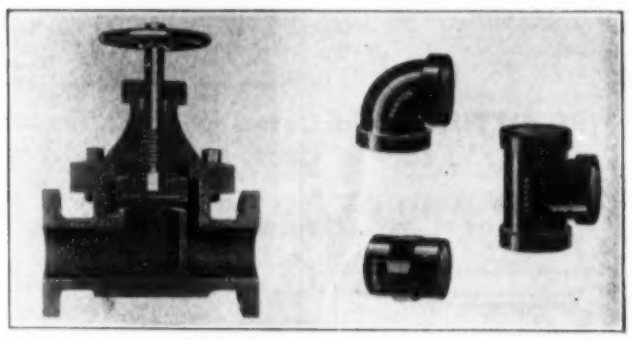
Insulation, steel decking, metal vents, hoods, felts, "hot stuff", can be lifted from the ground and handled on a roof with this new utility equipment. The three-wheel truck will carry 1,000 pounds. The ball bearing wheels and rubber tires ride over a roof without indenting or rutting it. Wheels and brakes are protected with splash guards to eliminate clogging by roofing compounds. A lifting lug assists in raising the truck to the job. Overall dimensions are 56 by 34 by 32 inches. List price of the truck is $98.50.

The drum upender, the lifter and the dolly are supplementary equipment. The lifter will take 20, 30 and 55-gal. drums. It holds them in secure upright position. The lifter applies in connection with a standard hoist. The dolly takes drums to 24 in. in diameter for movement on four ball bearing casters. The upender permits a worker to lift a loaded drum from its side to its base. List prices are about $8 for the upender, $50 for the lifter, $23 for the dolly.

If you write maker identify as IEN - 13672

VALVE . . And pipe fittings made of Buna-N or natural hard rubber

Source: VANTON PUMP & EQUIPMENT CORP.
7308 Empire State Bldg., New York 1, N. Y.



Temperature to 225 deg. F.

Sizes range from 1 to 4 in. in the company's new line of valves, pipe fittings and pipe to handle corrosive fluids. The valves are in globe, angle and Y-design. The fittings are available for any combination of pipe installation. They and the pipe, which is available also, can be made of Buna-N or natural rubber. The valves are flanged. The fittings are supplied with American National pipe thread. Pressure is to 50 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13673

HIDDEN ASSET!

Customer confidence doesn't show on our ledgers, but we think it's just about the most important asset we've got.

Over the years we've made a lot of old customers out of new customers simply by giving each customer exactly the right kind of gear for his job. These customers continually express their confidence by letting us assume complete responsibility for their gear problems.

This situation pays dividends all around. It enables customers to save time and money, and it gives us considerable repeat business.

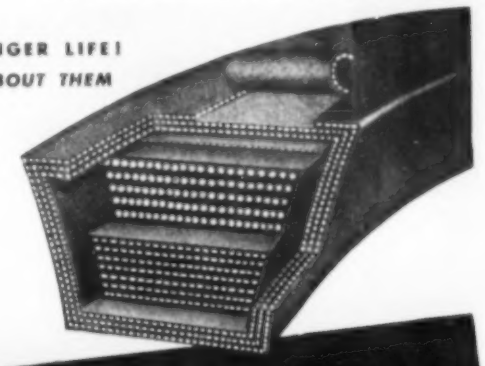
We'll enjoy your confidence, too, and you'll benefit in the bargain! THE EARLE GEAR & MACHINE COMPANY, 4707 Stenton Ave., Philadelphia 44, Pa.

It's good business to do business with EARLE!

EARLE GEARS

If you write maker identify as IEN - 13674

FOR LONGER LIFE!
—ASK ABOUT THEM



DODGE SEALED-LIFE V-BELTS

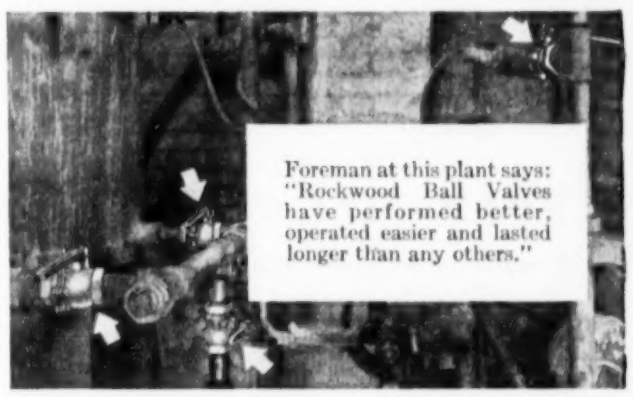
● The life is sealed in! Special cover protects tension members — insures *longer belt life.* Dodge Sealed-Life V-Belts are factory matched to TAPER-LOCK Sheaves for best performance. Stocked by Dodge Distributors. Write us for complete details.

DODGE MANUFACTURING CORPORATION, 600 Union St., Mishawaka, Ind.

DODGE
of Mishawaka, Ind.

FIRST IN POWER TRANSMISSION MACHINERY

If you write maker identify as IEN - 13675



Do you need a FULL-FLOW VALVE?

FULL-ROUND-FLOW in ceramics plants, where Rockwood Ball Valves, handling clay-and-water mixtures, protect product quality by preventing air bubbles caused by turbulence in conventional valves. What are *your* applications?

Other features — positive leakproof seating; quick opening and closing and extra wear-resistance. Tested and listed by Underwriters' Laboratories, Inc. Write for complete details. Rockwood Sprinkler Company, 40 Harlow Street, Worcester 5, Mass. Distributors in all principal cities.

ROCKWOOD

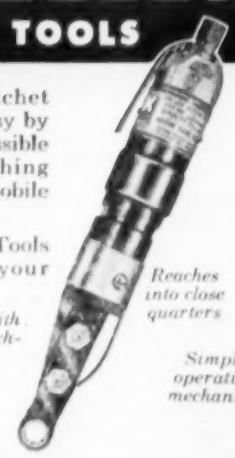
ROCKWOOD FULL-FLOW BALL VALVES
THE FLOW IS AS ROUND AS THE PIPE ITSELF

If you write maker identify as IEN - 13676

Tighten those hard-to-reach bolts WITH KELLER AIR TOOLS

Keller air-powered Ratchet Wrenches make tough jobs easy by reaching into otherwise inaccessible places . . . such as attaching accelerator pedals on an automobile assembly line.

These and other Keller Air Tools are waiting to help solve your production problems.



Send for **illustrated descriptive bulletin and detailed information**

Keller Tool Company
GRAND HAVEN, MICHIGAN

If you write maker identify as IEN - 13677

feature for feature...
THIS NEW SQUARE D VOLTAGE TESTER
Tops them ALL!

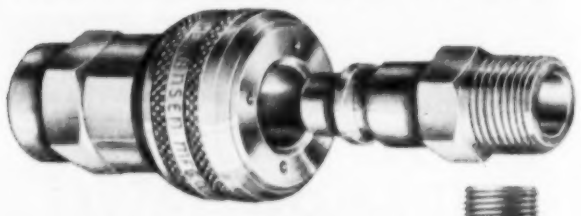
for further details, write Square D Company, 6060 Rivard Street, Detroit 11, Michigan

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

If you write maker identify as IEN - 13678

HANSEN
QUICK-CONNECTIVE
PUSH-TITE COUPLING
TRADE MARK
Provides Instant Automatic Flow or Shut-Off



To connect a Hansen Push-Tite Coupling, you merely push the Plug into the Socket with one hand. Flow is instantaneous.

To disconnect, push back sleeve on Socket . . . Coupling disconnects and flow is shut off instantly and automatically. No tools required. When Coupling is connected, Plug is free-swiveling, thus eliminating any possibility of kinks in hose.

Two-way shut-off and straight-through Couplings also available.
WRITE FOR CATALOG

THE HANSEN MANUFACTURING COMPANY
4031 WEST 150TH STREET • CLEVELAND 11, OHIO

If you write maker identify as IEN - 13679

packaging problem...

send for a sample CHASE POLYTEX BAG

Manufacturers of small parts or perishable products are finding that Chase POLYTEX bags are the economical answer to their packaging needs. These tough, transparent bags are odorless and moisture-proof, and resist the growth of bacteria and mold. They are non-toxic—airtight—and offer full protection to metal, hygroscopic and anhydrous products. Sized to fit your needs, these bags are available plain or printed in attractive colors. Send for free samples—and prices.

SINCE 1847
CHASE BAG COMPANY
309 West Jackson Boulevard,
Chicago 6, Illinois

If you write maker identify as IEN - 13680

LIGHTING . . Explosion proof light and transformer for hazardous places

Source: CROUSE-HINDS COMPANY
7th North & Wolf Sts., Syracuse 10, N. Y.

Flame tight joints

New trouble light consists of an aluminum housing, a concentrating lens, a composition handle, a support hook, an explosion proof connector and mechanical cord grip. It also includes an explosion proof 120/12-volt transformer into which the connector plugs.

The user installs one or more transformers on conduit lines leading into dangerous locations. He supplies or specifies the length of extension cord he wants to the light. He also provides a 12-volt lamp, the same as those employed in motor vehicle head lights.

Type EPLH is the designation. The lamp is suited to inspect the interior of process vessels and tanks and to work around equipment where an explosion hazard exists.

If you write maker identify as IEN - 13681

TESTING . . Infrared equipment for continuous check on a selected gas

Source: LISTON-BECKER INSTRUMENT CO.
647-51 Hope St., Springdale, Conn.

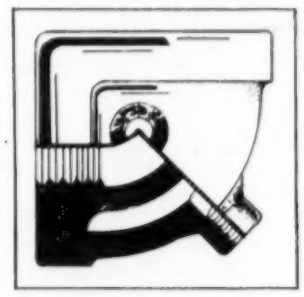
Sample pressure to 500 pounds

Carbon monoxide, carbon dioxide, water vapor, methane, acetylene, benzene, nitrous oxide, ethane are representative gases that can be checked continuously in a plant stream by application of the company's Model-21 industrial analyzer, previously described IEN-6820-53. New design of the instrument employs high sample pressures to increase initial sensitivity to a point where changes as low as 0.3 ppm. can be detected. The new equipment is now in service in several plants to measure carbon monoxide and carbon dioxide over a range of 0 to 50 ppm. in ammonia synthesis gas.

If you write maker identify as IEN - 13682

PIPE FITTING . . Jacketed design ½ to 4 in. sizes, elbows and tees

Source: RED JACKET CO.
235-39 Fourth Ave., Pittsburgh 22, Penna.



A 90 deg. elbow

New line of threaded fittings, from ½ to 4 in., has been added to the weld fittings previously described IEN-4267-53. The line includes 45 and 90-deg. elbows and tees. Construction is in 125-lb. cast iron and in 150-lb. steel. Face to center dimension is 1½ to about 4⅛ inches. The jacket connections are ⅜ to ¾-in. pipe threads.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

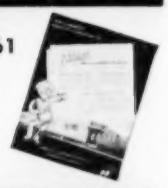
If you write maker identify as IEN - 13683

Federal **ONE STOP STAMPING SERVICE:**

101

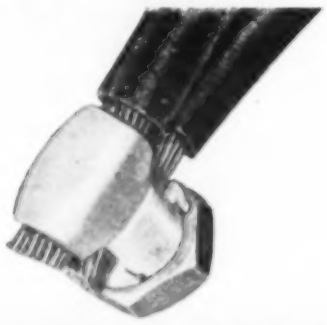
WRITE TODAY!
Tell us where to send these BULLETINS earmarked for you.
And when you're writing, why not send us the specs for that stamping job coming up? . . . We'll send you a quotation with no strings attached.

161



Federal TOOL AND MANUFACTURING CO.
3612 ALABAMA AVE. (ST. LOUIS PARK)
MINNEAPOLIS, MINNESOTA
"QUALITY STAMPINGS IN SMALL QUANTITIES"

If you write maker identify as IEN - 13684



INSULATE SPLIT-BOLTS
THIS EASY WAY!

1 Cushion sharp edges with "Scotchfil" Electrical Insulating Putty. Comes in 1½ in. x 5 ft. rolls, applies like tape. Moulds into a solid.

2 Insulate and seal against oil and moisture with "Scotch" Electrical Tape No. 33. Over 10,000 V. dielectric strength. U L seal.

DO IT WITH "SCOTCH" BRAND . . . GET IT TODAY!

The term "Scotch" and the plaid design are registered trademarks for the more than 300 pressure-sensitive tapes made in U.S.A. by Minnesota Mining & Mfg. Co., St. Paul 6, Minnesota.

SCOTCH Electrical Insulating Products

If you write maker identify as IEN - 13685

Specify **MEYERCORD DECAL** *Transfers*

—for difficult highly-specialized applications

—for long day-after-day production runs—

Meyercord Laboratory and Production Experience —PLUS Unexcelled Service—to Serve You *Better!*

Sometimes we are too prone to tell our friends about the spectacular achievements of Meyercord in solving those "impossible" decal transfer applications . . . like the new E-51 aircraft decals that resist up to 900 degree temperatures of jet engines, as well as the ravages of strong solvents and aircraft fuels. Specialized decal applications are a mighty important part of our business . . . but we're still first and foremost in the business of supplying standard Meyercord nameplate and identification decals. Whether you make typewriters, appliances, electrical conduit . . . any product that is turned out on long-time production runs, be sure to investigate the advantages of Meyercord decal transfer *uniformity, fine quality and absolutely unbeatable service* on your production line.

Send for This Manual of MEYERCORD DECAL NAMEPLATES

Shows hundreds of uses for durable, washable decal nameplates . . . as trademarks, instruction charts or diagrams—in any size, colors, or design. This manual is FREE . . . request it on your business letterhead, please.

THE MEYERCORD CO.
World's Largest Decalcomania Manufacturers
DEPT. M-315
5323 WEST LAKE ST.
CHICAGO 44, ILLINOIS

If you write maker identify as IEN - 13686

PROTECT
your expensive dies and machine parts
USE
ACME
RED OR BLUE LABEL
PRECISION
DOWEL PINS

Acme Dowel Pins break before bending or mushrooming—thus saving expensive equipment from ruin through misalignment. Order standard sizes from stock. Attractive prices on special sizes and large quantities.

WRITE FOR DESCRIPTIVE CIRCULAR

Acme Industrial Company
Makers of Standardized Jig & Fixture Bushings
215 N. Laflin Street • Chicago 7, Illinois
THE SERVICE SHOP TO "INDUSTRY" FOR MORE THAN 25 YEARS

If you write maker identify as IEN - 13687

Sizes to fit set screws from #2 to 2" and cap screws from #1 to 1½"

ALLEN HEX KEYS

- Uniformly perfect fit
- Sharp corners, chamfered ends
- Made from special Allenoy Steel
- Heat treated for maximum torsional strength

Because "the key is half the fastening team" Allen pays special attention to producing precision fit keys of extra strength, without brittleness. Look for the Allen name and size on the key.

T-TYPE KEY

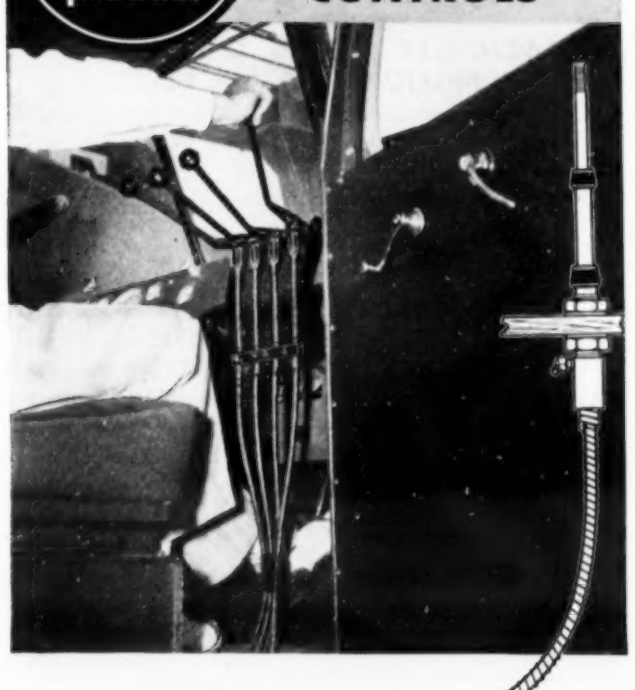
SOLD ONLY THROUGH LEADING INDUSTRIAL DISTRIBUTORS

THE ALLEN MANUFACTURING COMPANY
Hartford 2, Connecticut, U. S. A.

If you write maker identify as IEN - 13688

an ACCO product

TRU-LAY PUSH-PULL CONTROLS



for Continuous or Intermittent Transmission of Reciprocal Motion

SOLID . . . as a rod
FLEXIBLE . . . as a wire rope

Tru-Lay Push-Pulls snake around obstructions. Provide positive remote action. Operate while flexing, as on shakers. Few or many bends. Short or long distances. Ruggedly constructed for years of service. Capacities up to 1000 pounds input.

Write our Detroit office today for DH-287

TRU-LAY PUSH-PULL CONTROLS

ACCO

AUTOMOTIVE AND AIRCRAFT DIVISION
AMERICAN CHAIN & CABLE

601 Stephenson Bldg., Detroit 2
2475 Porter St., Los Angeles 21 • Bridgeport, Conn.

If you write maker identify as IEN - 13690

METER . . Reads gasoline flow to an engine in gallons and hundredths

Source: TRACKTEST EQUIPMENT CO.
Box 499-A, Dept. IEN, Franklin 1, Mich.

Checks engine performance

New McCulloch fuel flow meter applies in the feed line to the carburetor on a gasoline engine. It keeps track of fuel delivered to the engine as a means to check performance. The meter itself applies in the gasoline line. It delivers 800 impulses per gal. to an electric counter that can be mounted in a convenient location and connected to the meter output circuit and to a 6-volt battery.

The counter reads to 999.99 gal. and then repeats. It can be reset to zero at any time. It also can be locked against resetting. Capacity through the meter is maximum at 15 gph. A bypass permits greater flow for a peak load. Two or more meters can be connected in parallel for greater capacity. Air bubbles and vapor are by-passed. Accuracy is within 2 per cent. Weight is 2 pounds. List price is $50.

If you write maker identify as IEN - 13691

CALCULATING . . Ten key machine to add, subtract, multiply, divide

Source: REMINGTON RAND INC.
315 Fourth Ave., Dept. IEN, New York 10, N. Y.

For fast action

Invoices and sales figures, payrolls and tax returns, inventories and statistical reports are representative applications for which this new Model-99 automatic printing calculator is suited. Percentages of increase and decrease can be computed, profit and loss statements analyzed, invoices verified, departmental expenses prorated, financial reports drawn up.

Individual factors, such as divisors and multipliers are distinguishable on the Simpla-Tape. Sub-totals and totals print in red. The machine clears automatically at the end of each problem and the total or asterisk on the tape indicates readiness for the next problem. The machine can be set to retain a multiplicand indefinitely as the basis for constant multiplication. Operating a lever holds the grand total only of a series of computations.

Ten numeral keys are grouped in a 3½-in. square. Multiplying keys, 0 to 9, are located in a row below the numeral keys. Mechanism drive is by a two-speed motor for fast computing action and a little slower printing. The assembly is secured in an aluminum housing that is spring mounted on feet to minimize vibration and noise. Weight is 39 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13692

If you write maker identify as IEN - 13693

CLUTCHES by ROCKFORD

No Push—No Pull—Just Ride This Motorized Wheelbarrow

The forward and reverse, controlled dump, and direct steering features of Koehring Company's MOTO-BUG take the hard work and high cost out of material handling for construction and industry. ROCKFORD CLUTCHES contribute to the versatility of this handy unit. Let ROCKFORD clutch engineers help plan efficient power transmission controls for your machines.

ROCKFORD CLUTCH DIVISION BORG-WARNER
303 Catherine Street, Rockford, Illinois, U. S. A.

If you write maker identify as IEN - 13694

NEW WILLSON Interchangeable Respirator

First truly interchangeable respirator. Requires no additional parts or accessories to use any one of the cartridges, filters, or combinations shown.

These Respirators are individually packed in sealed, transparent plastic bags enclosed in a sturdy metal-edge box.

Write for the new bulletin fully describing these new Willson Respirators. Standardization on the new Willson No. 800 Interchangeable Respirator can greatly simplify your respiratory protective inventory.

More than 300 safety products carry this famous trademark

WILLSON® (Established 1870)

WILLSON PRODUCTS, INC., 217 Washington Street, Reading, Pa.

If you write maker identify as IEN - 13695

Best Buy in Hoists!

. . . and here's why!

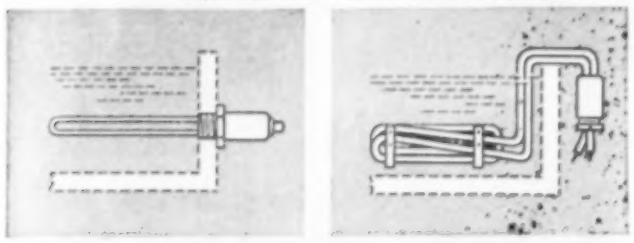
WHITING ELECTRIC CHAIN HOISTS

1. Low operating cost.
2. Safe! The only hoist with self-locking, double worm gear which acts as its own load brake.
3. Steel from hook to hook—heavy, positive acting limit switches.
4. Dual voltage motors quickly convert from 220 to 440 volts or vice-versa.
5. Just hang it up, plug in, pull cord (one-hand control) and it goes to work.
6. Assured performance, backed by the exclusive Whiting Warranty Plan.
7. Most standard models shipped from stock.

Send for Illustrated Bulletin H-112

WHITING CORPORATION
15629 Lathrop Avenue, Harvey, Ill.

If you write maker identify as IEN - 13696



Heat liquids fast, efficiently with Calrod* immersion heaters

Applicable to nearly any liquid heating job, long-life G-E "screw-in" and "over-the-side" Calrod immersion heaters give you this top performance:

Efficiency—heaters are right in liquid, for maximum heat transfer.

Cleanliness—no open flame to cause smoke and fumes, create fire hazards.

Uniformity—adaptable to thermostatic control for precise temperature regulation.

For more information, see your G-E Apparatus Representative or Distributor. And write now for—

FREE APPLICATION BULLETINS

GEA-5077—"Heating Liquids with Electric Heaters"
GEA-5545—"Calrod Heater Selector Guide"
Sect. 720-112, General Electric Co., Schenectady 5, New York.

*Reg. Trade-mark of General Electric Co.

GENERAL ELECTRIC

If you write maker identify as IEN - 13697

Hear Here!

Loudness Reduced 50%* Inside a BURGESS-MANNING ACOUSTI-BOOTH

In the hushed interior of this roomy, airy acousti-booth you hear easily while telephoning. Walls of thick, sound absorbing material, and patented construction reduce the loudness of noise by 50%.

When you invest in a Burgess-Manning Acousti-Booth you are purchasing better communications . . . good hearing means fewer errors.

Model 211 Floor Booth

Based on studies by a prominent research organization.
Write for Bulletin A-107

BURGESS-MANNING COMPANY
Architectural Products Division
5970-A Northwest Highway, Chicago 31, Illinois

If you write maker identify as IEN - 13698

This company started in a smaller Armco Steel Building. Then business increased and more room was required. So they simply added more standard Armco Building parts. The needed space was obtained quickly, economically.

Erection is easy even for inexperienced crews with the unique STEELOX method of construction. And because Armco Buildings are all-steel, there is nothing to crack, warp or rot. They stay rigid and weather-tight.

Use Armco Buildings for shops, offices, warehouses and similar needs. They are ideal on permanent or temporary sites.

WRITE FOR THE COMPLETE MONEY-SAVING STORY

ARMCO DRAINAGE & METAL PRODUCTS, INC.
3293 Curtis Street, Middletown, Ohio

If you write maker identify as IEN - 13699

MELTING . . Electric tank mounts on bench, for wax or adhesives

Source: AEROIL PRODUCTS CO.
67-71 Wesley St., South Hackensack, N. J.

Doubles as glue pot

Capacity is 3½ gal. for this new Type-ST3 insulated tank. It represents further development of the Type-PE line of electrically heated tanks that range from 1 pint to 5 gallons. Operation is on 110-volt ac. in standard assembly. Input is 500 watts to the strip elements. A thermostat can be set for a desired temperature which shows on a dial thermometer. Inside dimensions are 10 by 10 inches. Outside measurements are 14 by 17 inches.

If you write maker identify as IEN - 13700

METAL . . Haynes alloys made in 0.0005 to 0.125 inch strip

Source: GENERAL PLATE DIVISION
70 Forest St., Attleboro, Mass.

Cold rolling controls quality

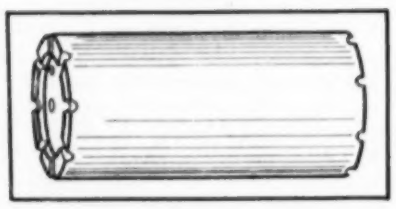
Stem pads on valves handling super-heated steam, deflectors for hot spots in aircraft jet engines, thin spring blades for high temperature switching devices, diaphragms, rupture discs, industrial knives are typical applications for Haynes Alloy No. 25 which the company is now prepared to cold roll in thicknesses down to 0.0005 inch.

The alloy has ultimate strength of 192,000 lb per sq. in., yield strength of 163,000 lb. per sq. in., elongation at 27 per cent, Rockwell hardness at 44 on the C scale with 20 per cent reduction and no subsequent aging. Hardness, to 55 on the Rockwell C scale, can be produced with ultimate strength to 322,000 lb. per sq. in., elongation at about 2 per cent with 50 per cent cold reduction followed by an aging heat treatment. The alloy combines high strength and hardness with corrosion resistance at temperatures to 2,000 deg. F. The company also can cold roll Stellite, Hastelloy "B" and Hastelloy "C".

If you write maker identify as IEN - 13701

GAGE . . Cylindrical square for checking, inspection, layout

Source: REID TOOL SUPPLY CO.
332 W. Delano Ave., Muskegon Heights, Mich.



Maintains accuracy

Three sizes measure 3 to 5 in. in diameter and 4½ to 12 in. in height in this new precision cylindrical square. It is made from low carbon seamless steel tube with ends welded in place. It is carburized, hardened, treated for stability, then is ground so both ends are square with the body. Semi-circular grooves in the ends act as dirt catchers. Weight is 6 to 32 pounds. List price is $58 to $121.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13702

THE SERVICE RECORDER COMPANY
1375 Euclid Avenue • Cleveland 15, Ohio

If you write maker identify as IEN - 13703

Drill Holes within .001" Accuracy with the Master Optical CENTER LOCATOR

Speediest—Simplest—most accurate method of locating centers and drilling holes. For a decade, machinists have been drilling and spacing holes with the Center-Locator to within .001". Just the thing for drilling round holes in thin material . . . avoiding drill run-outs . . . counter-boring holes with an ordinary drill. Makes your drill press do the work of a jig boring machine!

Easy to operate: Simply lay out your work with a height gauge, locate center through the powerful magnifier, then replace the magnifier with any of 16 drill bushings furnished.

38.50 postpaid or from your dealer. Unconditionally guaranteed.

Bulletin on request

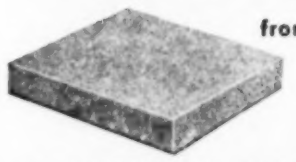
MASTER SPECIALTY CO. INC.
3725 Monitor Avenue
Minneapolis 16, Minnesota

Affiliated with Specialty Products Co.

If you write maker identify as IEN - 13704

Armstrong's

VIBRACORK CUSHIONS VIBRATION



from Hydraulic Presses, Pumps, Compressors, and many other types of Machinery and Equipment

. . . ACTUALLY FLOATS THE LOAD ON MILLIONS OF AIR CELLS!

Vibracork is a resilient machinery isolation cork plate made of pure cork granules, compressed and baked under pressure.

Convenient to stock—Standard sheets, 12" x 36"; Standard density 2" and 3" thick; Heavy density, 1", 2" and 3" thick.

Easy to use—Can be cut to size on the job with an ordinary hand saw.

Loading range—Standard density, 1500# to 4000# per. sq. ft.; Heavy density, 5700# to 8500# per. sq. ft.

Availability—Immediate delivery. Korfund is sole distributor for the United States.

For installation data and further information, ask for Bulletin VC-500.

THE KORFUND CO., INC.
KORFUND VIBRATION CONTROL — SPRINGS — RUBBER — CORK
48-35 E. Thirty-second Place • Long Island City 1, N.Y.

If you write maker identify as IEN - 13705

DICKERMAN LEADS AGAIN . . .

NO OTHER FEED — AT ANY PRICE — OFFERS ALL THESE PRODUCTION INCREASING ADVANTAGES!

NEW MEEHANITE CASTINGS
Massive frame of virtually indestructible meehanite makes the new Model K the strongest hitch feed ever built.

LONGER FEED LENGTH
Extra frame strength allows full 2½" feed length on stock up to 5" in width.

CARBIDE GRIPPER PLATES
Carbide gripper and wear plates are standard on this new, rugged, versatile feed.

A great, new addition to the Dependable Dickerman line — a feed that will outlast almost any die — trouble free, accurate — day in — day out operation speeds production and actually cuts parts cost up to 60%.

FIRST

Send for LITERATURE and CATALOGS on the complete line of Dickerman MONEY-MAKING FEEDS.

Dickerman
H. E. DICKERMAN MFG. CO.
324-315 ALBANY ST. • SPRINGFIELD, MASS.

If you write maker identify as IEN - 13706

Eliminate leakage in hydraulic and pneumatic cylinders . . . assure positive sealing and longer packing life by maintaining constant contact between packing lip and cylinder wall. **HPL** Cup Expanders are highly impervious to the effects of brine, alcohol and gasoline . . . easily and quickly installed without special adapters or design changes in clamping plate. **HPL** Cup Expanders are especially recommended for cylinders less than 3 inches in diameter.

1566-HPL

Write today for Bulletin No. 621

HPL Manufacturing Co.

15175 MILES AVENUE • CLEVELAND 28, OHIO

If you write maker identify as IEN - 13707

Look To The Leader For Lubricating Devices

GITS

40 Years' Leadership

Yes, for 40 years GITS has been setting the standard for industry... solving tough lubricating problems... earning the confidence of manufacturers . . . it's the reason people say, "Call GITS first".

Low Cost

Yes, GITS oil cups can do a complete lubricating job for you . . . prolonging bearing life, reducing maintenance costs, cutting down-time, boosting production . . . and GITS oil cups cost so little.

World's Largest Selection

Yes, only GITS can offer you such a wide range of standard stock sizes. From *just one* source you can get *all* lubrication devices in *any design* for *any purpose.*

Consistent Top Quality

Yes, GITS is known for uniform quality in design, materials and machining . . . this means constant, dependable performance for you. Inferior products can cost you time and money. Demand the best . . . get GITS.

Write Today for FREE CATALOG *No. 60A*
Use it as your handy reference for lubricating devices

Oil Hole Covers, Oil Cups, Grease Cups, Bottle Oilers, Gauges, Gravity-Feed, Wick-Feed, Constant Level, Vibrating Rod Styles. Threaded or Drive-Type, Elbow or Straight.

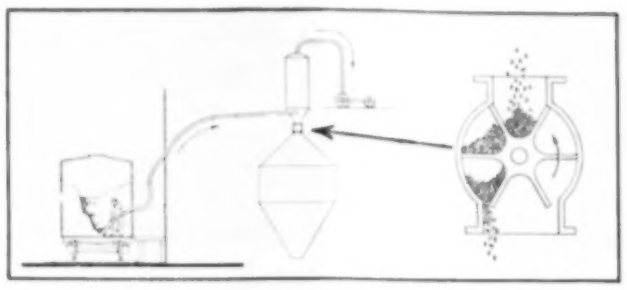
GITS BROS. MFG. CO.

1854 S. Kilbourn Ave. Chicago 23, Ill.

If you write maker identify as IEN - 13709

CONVEYING . . Vacuum equipment designed for dry granular materials

Source: VACU-BLAST COMPANY
P. O. Box 885-R, Dept. IEN, Belmont, Calif.



Safe and dust free

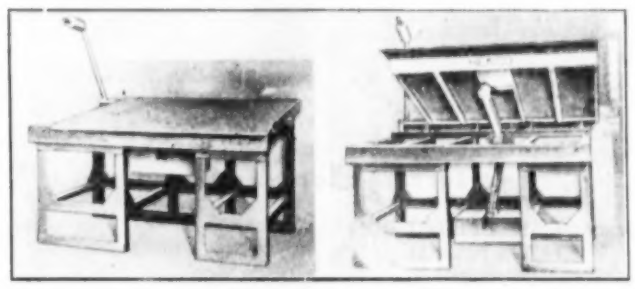
Motor driven vacuum pump connects through a dust collector and a materials unloader to a suction line leading to an intake nozzle in this new Vacu-Veyor conveying equipment. An operator guides the nozzle to draw in the materials from a pile in a yard, car, ship's hold, bin. The materials are carried through the line to the unloader where they are discharged through a rotary valve or double-chamber air lock into a suitable receiver. Dust is then removed in passage through the collector so only clean air is handled and discharged by the pump.

The equipment will convey materials to 150 ft. vertically, 200 ft. horizontally. The line employs flexible hoses that will reach around corners and obstacles. The nozzle can be located a maximum of 350 ft. from the unloader. The vacuum pump and dust collector can be placed an additional 300 ft. from the unloading point.

If you write maker identify as IEN - 13710

ELEVATOR . . Hand operated ramp raises and lowers at shipping platform

Source: KARL A. HERMAN CO.
410-14 Fuller Ave., N. E., Grand Rapids 5, Mich.



Locks in "up" position

New assembly of the Herco ramp, previously described IEN-5826-53, and a structural base make up a new self-contained unit to assemble at, rather than in, a shipping platform in removable arrangement. The unit can be removed or repositioned as conditions change. The company is prepared to supply the complete assembly or the upper counter-weighted unit only to mount on a stand provided by the user.

Side adjustment is provided through 10 in. by turning a crank engaging a rack and pinion to spot the ramp laterally. A lever is moved to lower the ramp to the truck floor against the action of the gear connected counterweight. Two sizes measure 48 by 72 in. and 60 by 72 inches. Capacities are 10 and 15 ton for the two units.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13711

Ability to predict with a high degree of certainty the results obtainable from a cutting tool is a worthwhile asset — developed through knowledge and experience, acquired either firsthand or from other users of known repute.

It's a satisfaction to know beforehand that the tool chosen for a job will turn out well—has inherent properties that assure consistently good performance.

Foresighted metalworkers have learned to rely on Kennametal. It is noted for doing one good job after another, day in and day out, as demonstrated by scores of regularly-issued Performance Reports.

Our accumulated knowledge and experience on how to "call the turns" on a wide variety of applications is yours for the asking. Our Field Engineers will be glad to help you. Kennametal Inc., Latrobe, Pa.

If you write maker identify as IEN - 13712

Set Your Sights for Savings!

JOB-ENGINEERED

ILLINOIS GLOVES

Proven on the production lines!... tested in the laboratory, Illinois Gloves give greater protection, longer wear, better fit! There's an Illinois Glove designed for your job...or, if you have a special problem, we'll engineer a special glove to meet its requirements! Write today!

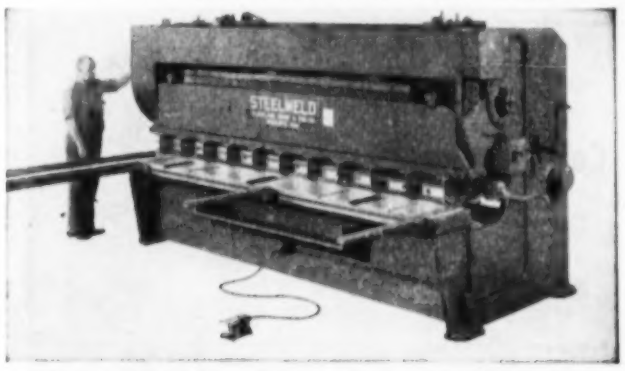
RECONDITIONING MEANS SAVINGS! Illinois Gloves are made strong, take reconditioning easily, come through stronger, good as new! Write about our own reconditioning process!

ILLINOIS GLOVES

Write For Catalog
Sales Office: 1401 Fairfax Trafficway
Bldg. D, Kansas City, Kansas

ILLINOIS GLOVE CO. CHAMPAIGN, PANA, EFFINGHAM

If you write maker identify as IEN - 13713



PIVOTED-BLADE SHEAR

A Revolutionary Design!

UPPER KNIFE TRAVELS IN CIRCULAR PATH

Radically different from all other metal-cutting shears. Overcomes handicaps of ordinary guillotine-type shears. No slides or guides to wear. Many other important features. All sizes for metal to 1-1/4" thick or 18'-0" long.

STEELWELD Pivoted-Blade SHEARS CATALOG No 2011

Send for free Catalog No. 2011

THE CLEVELAND CRANE & ENGINEERING CO.
4207 East 282nd St., Wickliffe, O

STEELWELD SHEARS

If you write maker identify as IEN - 13714

New **Bond S-L-U*** **DRUM TRUCK**

. . . for faster, easier handling

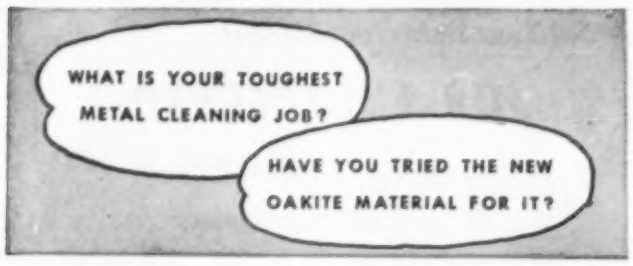
- Spring action chime hook.
- Floating axle with rolling motion.
- Rugged all steel welded construction.
- Two wheel types: vulcanized-on rubber tread or semi-steel.
- Rests in tilted position for maximum drainage.
- Stands upright for safe storage.

The *new* Bond *Self-Loading and Unloading Drum Truck takes "the work" out of lifting, moving and draining either drums or barrels . . . and speeds the job at that! Like every hand truck in the full Bond line, this drum truck is designed and built to give extra service, extra satisfaction!

Write today for your copy of Bond Bulletin R-61 . . . it gives all the facts on the new Bond Drum Truck.

BOND FOUNDRY & MACHINE COMPANY
Manheim, Pennsylvania

If you write maker identify as IEN - 13715



In recent months, Oakite chemists have developed 16 new materials for performing such metal cleaning and processing operations as:

- Heavy-duty cleaning in tanks
- Washing in spray machines
- Electrocleaning zinc-base die castings
- Etch-cleaning aluminum
- Stripping paint
- Drawing and forming
- One-operation cleaning, pickling and conditioning for painting
- Applying zinc phosphate coatings to steel in preparation for painting

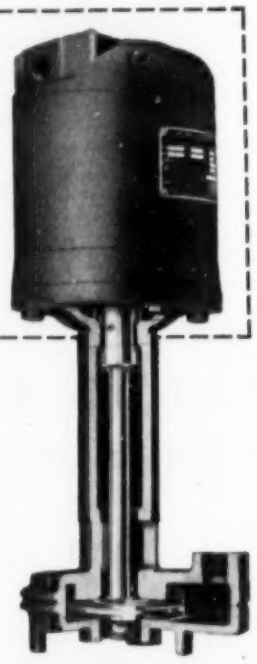
FREE Tell us which jobs interest you when you write for our revised 44-page booklet "*Some good things to know about Metal Cleaning*". Address Oakite Products, Inc., 16A Rector St., New York 6, N. Y.

Technical Service Representatives in Principal Cities of U. S. and Canada

SPECIALIZED INDUSTRIAL CLEANING
OAKITE
MATERIALS • METHODS • SERVICE

If you write maker identify as IEN - 13716

Motor-Driven Centrifugal Pumps That Dirt Can't Hurt!



Here's a complete line of ten different Motor-Driven Centrifugal Pumps that are completely protected from damage by dirt or abrasives. Hydraulically balanced, their design eliminates metal-to-metal contact below water level. Motors are of standard NEMA design, for easy replacement, and totally enclosed against dust or vapor.

You'll find that the design simplicity and sound construction of these Brown & Sharpe Pumps make them ideal for countless applications where grit or foreign substances may be present. Write for Pump Catalog. Brown & Sharpe Mfg. Co., Providence 1, R. I., U.S.A.

BUY THROUGH YOUR LOCAL DISTRIBUTOR

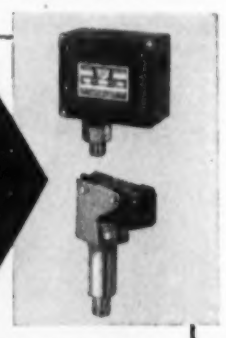
Brown & Sharpe BS

If you write maker identify as IEN - 13717

TYPE J7

RUGGED, COMPACT, INEXPENSIVE PRESSURE CONTROLS

TYPE J40



The Type J40 pressure control is a rugged, precision-built and inexpensive unit for use where light, compact and reliable controls, without head enclosures, may be used. It is used widely on industrial equipment, on aircraft and other engine applications. Complete specifications are covered in Bulletin #5-9. Write for one today.

The Type J7 is the most compact enclosed industrial pressure control offered by United Electric. It may be used for controlling gas, liquid or air pressure in applications where space and weight availability is a premium and where precise performance under rugged vibration conditions is a requisite. Bulletin #5-7 gives full details. Write for it today.

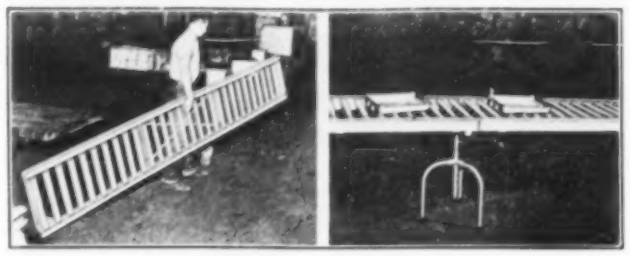
UNITED ELECTRIC CONTROLS COMPANY
80 School Street, Watertown, Mass.

STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES

If you write maker identify as IEN - 13718

CONVEYING . . Gravity sections with magnesium frame, shafts, rollers

Source: MAGLINE INCORPORATED
7930 Mercer St., Pinconning, Mich.



Easy to carry and set up

Load rating is 500 lb. per 10-ft. section for this new magnesium gravity roller conveyor. The sections are available with 12, 14 or 16-in. rollers with assembly weights at 60, 63 and 66 pounds. The rollers are mounted on $\frac{7}{16}$-in. magnesium hexagon shafts. They measure 1.71 in. in outside diameter and are normally spaced on 4-in. centers.

The frame is based upon a 3½-in. channel. Individual roller assemblies will carry 125 lb. each. Special length and roller spacing, as well as curve sections, are available to order. Support stands are in three heights between 17 and 72 inches.

If you write maker identify as IEN - 13719

PRINTING . . Carbon paper, three weights, apply on any typewriter

Source: PHILLIPS PROCESS CO.
198 Mill St., Rochester 4, N. Y.

Sample sheets upon request

Nev-R-Kurl is a new carbon paper in which one ink formula is employed on three weights of tissue backing. The lightest will make a maximum of 20 copies. The medium weight will make 10 copies. The standard weight will make 5 copies. Any of the three can be applied on standard electric and noiseless typewriters. All will make smudge proof copies. They will not curl or wrinkle because the carbon is plastic backed.

If you write maker identify as IEN - 13720

LIGHTING . . Photoelectric control to turn outdoor lights on and off

Source: FISHER-PIERCE COMPANY
168-72 Pearl St., Boston 85, Mass.

Opens to service

Series 64400 is a new control unit, rating 575 watts, to turn outdoor lights on and off in step with change in natural illumination. Accessories are available to mount the control on the fixture or on a pole or cross arm. Initial cost is low enough to permit use of one control per fixture when the unit is employed in connection with street lighting.

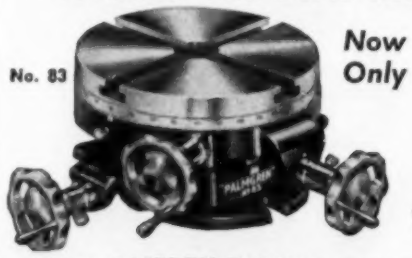
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13721

PALMGREN

ROTARY, INDEX, MILLING TABLE
The Only Table Having Rotary Feed Combined with DUAL CROSS FEEDS!

No. 83



Now Only **$54.50**

Turns Your DRILL PRESS Into A VERTICAL MILLER

This PALMGREN TABLE is sensational in price, construction and performance. Just what shops need for accurate, precision work. You can mill straight or curved, slot, drill, also rout, rabbet, mortise and sand on wood. Do hundreds of jobs as milling slots, grooves, keyways, squares, hexagons, curves, flats, dovetails, indexing and laying out work.

Designed for use on Drill Press or Milling Machine. It handles all types of metal and woodworking operations and makes your drill press a vertical milling machine. Precision built. It permits close tolerances. Rotary Feed is calibrated in degrees. Cross Feeds in thousandths. Cross slides and feed are 2⅛" each side of center—4½" overall. Has Acme thread cross feed screws, adjustable gibs on cross slides—40 to 1 worm and gear ratio in rotary feed. 4 Bolt slots—2 lock screws.

No. 83 Table Dia. 8", T-Slots ⅝", Base Keyway ⅝", Base Dia. 6¼", Ht. 5", Wt. 37 lbs. Price Only $54.50.

Order Today! Write for new Catalog No. 201

CHICAGO TOOL and ENGINEERING CO.
Mfrs. of PALMGREN PRODUCTS Since 1918
8406 South Chicago Ave. • Chicago 17, Ill.

If you write maker identify as IEN - 13722

HANDLING BULK MATERIALS?

"TAKE IT UP A FLO-TUBE"®

CANTON STOKERS

The spiral conveyor of steady, dependable service. Sturdy cast iron trough bolts together in 3 ft. sections, capped with steel plates for easy removal if ever necessary. Built to take the abuse of coal, yet with tolerances just right to handle materials from grain size to lump.

To fill 3 or more hoppers use gate-valves in Flo-Tube horizontally. Below, filling 2 hoppers with "Y" chute.

Hopper level maintained by 'off-on' automatic switches.

Exposed end for pick-up

CANTON STOKER CORP.

SPECIALISTS IN AUTOMATIC COAL FIRING, HANDLING AND CONTROL EQUIPMENT

107 Andrew Place, S. W. • Canton, Ohio

If you write maker identify as IEN - 13723

Every RIDGID Is Work-Tested... Before It Leaves the Factory

...to make sure it gives you the Best and the Most wrench service for your money

The reason RIDGID Heavy-Duty Pipe Wrenches are known for the brutal punishment they can take is because of the toughness built into them, checked part by part and then hard work-tested when assembled...not just one wrench in 100 or 1000 but *every last one!*... Add the guaranteed repair-free housing, no-slip no-lock jaws, handy pipe scale, easy spinning adjustment nut and comfort-grip I-beam handle and you see why genuine RIDGID gives you the big value for your money. Buy them at your Supply House.

THE RIDGE TOOL CO. • ELYRIA, OHIO

RIDGID
Work-Saver Pipe Tools

If you write maker identify as IEN - 13725

Belt Saver Pulleys

SINCE 1866

. . . Protect Expensive Belts

For rough service installations . . . for the handling of hard, abrasive materials—always specify the S-W 'BELT-SAVER'.

Its special wing and cone design and its self-cleaning action assure longer belt-life and reduced maintenance costs.

The 'BELT-SAVER' pulley is exclusive with Sprout-Waldron, along with a complete line of standard and special cast iron pulleys.

Write for Bulletin 35-A today! Sprout-Waldron & Co., 5 Logan St., Muncy, Pa.

Vertical Mixers, Attrition Mills, Rotary Feeders, Ribbon Type Mixers, Crushers, Knife Cutters, Continuous Mixers, Roller Mills, Separators, Pulleys

198

SPROUT-WALDRON

If you write maker identify as IEN - 13726

TOOL MANUFACTURERS, TOO, NEED TORNADO®

Take the case of Circle Tool and Mfg. Co., Chicago, . . . alert management recognized that constantly accumulating dust, dirt and chips were cutting into production time and efficiency . . . thus affecting quality and company profits.

They investigated! —and bought Tornado, the powerful vacuum cleaner with air velocities above 300 m.p.h. Now they clean walls, ceilings, floors or machines in a jiffy-pick up solids or liquids without any conversion. And, incidentally, quality as well as profits are on the upswing.

"ON-THE-SPOT" DUST PROTECTION

A Tornado dust collector quickly sucks up all dust from this grinder during operation.

Let the Tornado man turn your dust and dirt into profits . . . He'll gladly demonstrate right in your plant, at no obligation to you.

WRITE FOR TORNADO® BULLETIN 600 TODAY!

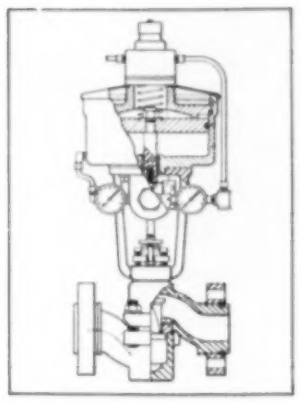
BREUER ELECTRIC MFG. CO.

5108 North Ravenswood Avenue • Chicago 40, Illinois

If you write maker identify as IEN - 13728

VALVE . . Air operated assembly with single seated split body design

Source: CONOFLOW CORPORATION
2102 Arch St., Philadelphia 3, Pa.



Bulletin LB-1

Series LB is a new assembly of the company's pneumatic instrument controlled air operated line valve for application in process lines from 1 to 4 inches. The simplified body construction permits use of replaceable interchangeable line flanges for 150, 300 or 600-lb. rating. The highest rating employs an ASA body using split ring holding design similar to a Van Stone joint. The seat ring is reversible and renewable. The valve can be assembled with its "characterized" Conoplug acting either down or up to close.

The pneumatic cylinder, that mounts on the valve body, can be operated with air pressure to 100 lb. for stem thrust to 5,000 pounds. Control is by instrument air pressure ranging from 3 to 15 pounds. The valve will move through its full stroke in 2 to 5 sec. with full range change in the instrument air pressure. Operation is essentially without friction for response to instrument pressure change as low as 0.2 in. of water. Face to face on the valve measures 8¼ to 17 inches. Valve center to cylinder top is about 19 to 26 inches.

If you write maker identify as IEN - 13729

HARD FACING . . Granular flux applies with automatic arc equipment

Source: LINCOLN ELECTRIC CO.
Box 3035-A, Cleveland 17, Ohio

Results are controllable

New flux has been developed to supply the alloy content of metal, deposited by automatic arc welding equipment, to result in hard facing finish using a conventional mild steel electrode. The flux can be employed with any standard automatic welding head. It surrounds and covers the arc as in standard hidden arc welding. Flux H-545 produces a metal alloy of carbon, manganese, silicon, chromium, molybdenum and vanadium. The deposit is magnetic at room temperature and, with recommended procedure, has a hardness of 53 to 57 on the Rockwell C scale.

Flux H-550 results in an alloy of carbon, manganese, silicon, chromium and molybdenum. This deposit is magnetic, semi-austenitic at room temperature and, with recommended procedure, also has a consistent hardness. Range is between 36 and 62 on the Rockwell C scale. This deposit is not machinable. The flux is packaged in 100-lb. bags. The company also is prepared to supply the mild steel electrode in coil form for continuous automatic application in sizes from 5/32 to 5/16 inch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13730

FOTO-FLO* MODEL C PHOTO-COPYING MACHINE

New! Speedier! More Economical!

DAYLIGHT OPERATION NO DARKROOM REQUIRED

Makes up to 5 (18" x 24") Prints a Minute of anything written, printed, drawn or photographed

WRITE DEPT. 53-40 for information showing how FOTO-FLO can speed production and lower photo-copying costs.

*Reg. U. S. Pat. Off.

HALOID THE HALOID COMPANY ROCHESTER 3, NEW YORK Branch Offices in Principal Cities

Photocopy Papers • Photo copying Machines • Photographic Papers

If you write maker identify as IEN - 13731

For Dependable, High-Pressure Connections

BLACKBURN Hi-Strength CONNECTORS

High-pressure connections are the best electrical connections. They are also the best mechanical connections because tests show that they have better ability to stay tight—are trouble-free once installed.

All connectors in the famous BLACKBURN Hi-Strength Line produce high pressure connections. Also, they are priced right to give you low cost connections that you can depend upon . . . Be sure to specify BLACKBURN!

SEND FOR CATALOG

JASPER BLACKBURN CORPORATION
35 Madison St. • St. Louis 6, Mo. • CEntral 3007

If you write maker identify as IEN - 13732

For your product-improving "TOUCH OF GOLD" —polish with ALUNDUM* Abrasive

Count on Norton ALUNDUM abrasive grain for extreme hardness and toughness, strict uniformity in size and shape, with a maximum of fast polishing, sharp-cutting edges. And its high capillarity means increased polishing wheel life and efficiency.

These and other advantages assure better polishing — your value-adding, cost-cutting "Touch of Gold" — every time you use ALUNDUM Abrasive.

YOUR NORTON DISTRIBUTOR can make quick deliveries, in any required quantity, from complete stocks in key cities. See him, too, about expert aid in polishing problems from your Norton Abrasive Engineer. Or write Norton Company, Worcester 6, Mass. Distributors in all principal cities. *Export:* Norton Behr-Manning Overseas Incorporated, Worcester 6, Mass.

*Trade-Mark Reg. U. S. Pat. Off. and Foreign Countries

G-252

NORTON ABRASIVES
Making better products to make other products better

If you write maker identify as IEN - 13733

LOWERED INSURANCE COSTS BUY THIS SAFETY FLOOR PLATE

Reduced accident rates give you two benefits—increased production and lowered insurance costs. You can have these benefits by installing A.W. ALGRIP Abrasive Rolled Steel Floor Plate, because ALGRIP gives non-skid foot safety—even on steep inclines.

Alan Wood makes this tough, impact-and-heat-resistant floor plate by rolling abrasive "grinding wheel" grain into steel plate's upper portion. This gives the plate hundreds of tiny, hard-gripping safety brakes which —even when wet or oily—put an end to costly, morale-shattering accidents. And ALGRIP can't wear out—heavy use only exposes new abrasive particles.

Safe for vehicles and men alike, A.W. ALGRIP pays for itself with savings from safety. Write today for full information on how ALGRIP can make money for you. This coupon gets you Alan Wood's new booklet on ALGRIP.

A.W. ALGRIP *Abrasive Rolled Steel Floor Plate*

ALAN WOOD STEEL COMPANY
CONSHOHOCKEN, PA.

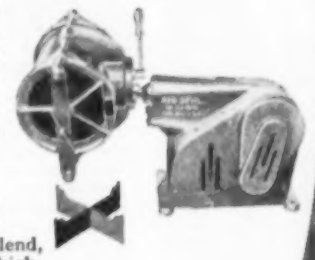
I want to learn more about ALGRIP savings from safety. Please send me your ALGRIP Booklet AL-5.

*Name*_____
*Company*_____
*Address*_____
*City*_____ *Zone*____ *State*____

If you write maker identify as IEN - 13734

better paint job with Red Devil Paint Conditioner

Paint pepped up by Red Devil Paint Conditioners goes on more smoothly, and better protects your product. Patented 3-directional motion puts pigment in perfect suspension —quick!



NOT JUST PAINT

Manufacturers of everything from printers' ink to putty use these machines to mix, blend, and rejuvenate all kinds of high-viscosity and low-viscosity mixtures.

If you have hard-to-mix, *or hard-to-keep-mixed blends*, Red Devil can arrange to have test samples agitated at a nearby location.

Various models provide automatically-timed agitation for ¼ pint to 5 gal. cans. Attachments for round and square containers.

Red Devil Catalog No. 21M lists all Red Devil three-way agitators and Red Devil floor maintenance machines. Write Red Devil Tools, 129 Coit Street, Irvington, New Jersey.

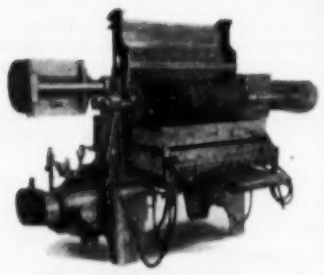
Products of 1868 Red Devil Tools. 129 COIT ST. IRVINGTON 11, N. J. U. S. A.

If you write maker identify as IEN - 13735

SURFACE FINISHING HAND TOOLS?

IMPROVE YOUR OPERATIONS with the Model 206-A

CLAIR SURFACE FINISHING MACHINE



Extremely versatile in service . . . this machine will perform any surface finishing operation from rough glaze to highly colored mirror reflecting surface. Equipped for either magnetic or mechanical holding fixtures . . . it will accommodate either flat or contoured products. Work surface is 38" wide; buffs range from 3" to 12" in diameter.

CLAIR MANUFACTURING CO., INC.
Specialized Machine Equipment For Glazing and Polishing Operations
OLEAN, N. Y.

Write for Details

If you write maker identify as IEN - 13736

Backstand belts triple production!

Send for Armour's free booklet to learn this amazing method!

Metal polishing has hit a new production high with backstand belts. They cut faster, cooler than set-up wheels—and cut down on the number of operations. In some plants, backstand belts have *tripled* production! To learn more about this modern method, send for Armour's free booklet, "Backstand-Belt Polishing."

Mail this coupon today

Please send booklet "Backstand-Belt Polishing"

Name ..... *Title* .....
Company .....
Address .....
City ..... *Zone* ..... *State* .....

ARMOUR *Coated Abrasives*

Armour and Company • North Benton Road • Alliance, Ohio

For Your Special Information

ALL MAKERS ARE LISTED — **IEN S-38**

Christopher Columbus employed somewhat less than 200 ton of shipping, the Nina, the Pinta and the Santa Maria, to discover America in 1492. Actually he did not set out for that purpose because he had no idea of the riches that lay between him and his original goal of a westward passage to Asia. When he did come to land and looked about him he found riches far beyond his wildest dreams. Such are the rewards for men who look diligently for the things they need or want.

Thomas Publishing Company will use, for 1954, somewhat more than 400 ton of paper alone to publish the basic source data, the product listings, the company names, the ratings and the addresses of all the manufacturers of all the products made in the land Columbus discovered, along with the advertising messages of a good many thousand among them. The Register is a "gold mine" of product information. Look about you, as Columbus did upon striking land, through the pages of Thomas' Register and you will see the wealth of things of every sort available to your needs.

Only be certain that you have reserved your copies of the multi-book Register for 1954. The reservations are coming in steadily, have been for some time now. We can see the end of the available supply.

YOUR OWN NEW PRODUCTS — **IEN S-39**

Hundreds of new products go on exhibit at the industrial shows each year. Additional hundreds just come quietly on the market without benefit of show promotion. We know this is so because we can see it in our comparisons of the products described in Industrial Equipment News and those listed at the exhibits. We know also that a good many additional new products do not reach either us or the exhibits, possibly because your own sales department does not know of the product information service that IEN offers without cost or obligation on your part.

Bring IEN to the attention of your sales and publicity departments. Suggest to them that they send us information on the new things you have developed for industrial use. We cannot go ahead on bare announcements or on releases that do not present basic data because our thousands of engineering, production and plant operating men are in responsible positions and look to IEN for the true product facts. We will be happy to go through your literature, your releases, your product specifications and build a story of the new products you have for sale. If you have a new product now, and prefer that we contact your publicity manager, just let us know the product name and tell us the man to write to.

Products described in IEN will be listed in Thomas' Register

If you write maker identify as IEN - 13737

FORCE 5 Action

5 movements in one numbering machine

One machine fills scores of numbering needs . . . provides consecutive, duplicate, triplicate, quadruplicate or repeat numbering at the flick of a finger. *Write for prices and catalog.*

WM. A. FORCE & COMPANY, INCORPORATED
216 NICHOLS AVENUE, BROOKLYN 5, N. Y.
The FORCE of NUMBERS

If you write maker identify as IEN - 13738

—for "INSTRUMENT-QUALITY" AIR IN COMPRESSED AIR OPERATIONS . . .

HERE'S YOUR ANSWER!

HANKISON MODEL B-30-D *Condensifilter*

Featuring the New-Economical DISPOSABLE FILTER CARTRIDGE

Dehydrate and filter ordinary plant air with a Hankison Model B-30-D Condensifilter for air of "Instrument-Quality." Condenser section removes moisture by lowering dew point of air to within 2 or 3 degrees of cooling water; low cost, disposable filter cartridge with 540 sq. in. of surface area removes even finest dirt particles. Capacity: 30 scfm at 100 psig.

Write for Bulletin B-30-D
For larger capacities, write for data on Model A-100.

HANKISON CORPORATION

If you write maker identify as IEN - 13739

PROBLEM:

Your paint jobs fail because of corrosion, moisture or abrasion

SOLUTION:

ERKOPON

The tough new plastic paint that effectively resists chemicals, dampness, friction

Erkopon produces a hard, tough protective coating on any type of reasonably clean surface. It has unusual resistance to sun, moisture and chemicals, and it retains its color and gloss indefinitely.

It forms a highly durable bond, and successive coats fuse into one protective film that offers superior resistance to corrosion and abrasion.

Write for full information and recommendations on your problem

ERKOTE® TECHNICAL COATINGS
EARL PAINT CORPORATION
240 Genesee Street • Utica, New York

If you write maker identify as IEN - 13740

FREE! New Safety Information 4-out-of-5 Plants Need!

IF YOU BURN oil, gas, powdered coal or other fuel, for power, processing or heating, the chances are 4-out-of-5 that you do not have complete safeguards against burner flame-failure explosions.

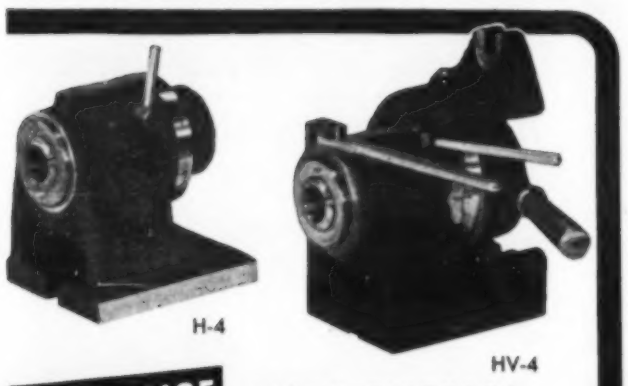
Why take chances . . . ? This new booklet gives you all the information you need to prevent flame-failure explosions. With it you can spot burner explosion hazards in your plant — identify obsolete or inadequate "protective" devices — determine your needs for the most modern safeguard equipment. Get your copy, free! Please give your company name and title.

WRITE:

COMBUSTION CONTROL CORPORATION
Dept. EB-12, 718 Beacon Street
Boston 15, Mass.

fireye

If you write maker identify as IEN - 13741



HARDINGE
ELMIRA, N.Y.

INDEX FIXTURES

The way to increased production is to hold work accurately and provide for rapid indexing. HARDINGE Collet Index Fixtures—H-4 for Tool Room and Inspection Departments; HV-4 for Production Departments—will help increase production on either new or old machines. Planned interchangeability for a variety of applications. Buy these standard fixtures instead of making expensive special fixtures.

HARDINGE COLLETS

For All Lathes and Automatics

Backed by 60 Years of Manufacturing Experience

HARDINGE BROTHERS, INC., ELMIRA, N. Y.

If you write maker identify as IEN - 13742

MARK-TIME "9000" Wall Time Switch

turns current off or on WHEN YOU'RE NOT THERE!

This Mark-Time switch is a good deal more than a great convenience . . . it saves you money! Because it remembers to turn the current off or on when you're not there to do it!

"9000" automatically controls circuits of store window lights, neon signs, hall and garage lights, attic fans, farm lighting systems . . . dependably turning them on or off at the time you set.

"9000" is easily mounted in any standard rectangular wall box. Movements only available for home or industrial heating controls.

Write today for full details and prices.

SPECIFICATIONS

Time ranges from 3 minutes to 12 hours. Rated at 20 ampere, 125 volt, 1 HP or 10 ampere, 250 volt operation. AC only. Available for either ON or OFF type operation. Hold feature also available—at HOLD position, current is ON, but timing mechanism does not operate until knob is turned from HOLD to a time period.

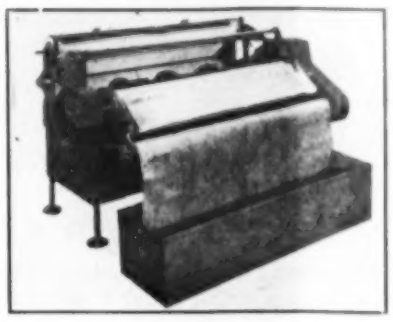
MARK-TIME
M. H. RHODES, INC.
HARTFORD, CONNECTICUT

Manufactured and sold in Canada by
SPERRY GYROSCOPE OTTAWA, Limited
3 Hamilton St., Ottawa, Ontario, Canada

If you write maker identify as IEN - 13744

SEPARATING . . Magnet and filter clean grinding and machining coolants

Source: BARNES DRILL CO.
856 Chestnut St., Rockford, Ill.



Bulletin 350

Kleenall is a new assembly of the company's magnetic separating equipment, previously described IEN-4865-50, and an intermittently fed filter element to remove foreign matter from metal working coolants, thread cutting oils, lubricating and honing and quenching oils, aluminum and steel rolling oils and run-in oils. Five sizes in the line rate 10 to 60 gpm. based on water soluble oil, 8 to 35 gpm. based on 90 SSU. 100 deg. honing oil, 3 to 20 gpm. based on 160 SSU. 110 deg. thread grinding oil.

The fluid is exposed first to the magnetic field by passing it through a flow channel surrounding a rotating magnetic drum. Ferrous particles and entrained foreign material are attracted and held until they are rotated from the flow channel to a point where they are scraped off. Then the coolant passes to the filtering area to move through the filter sheet where nonmagnetic metal particles remaining in the fluid, abrasives and foreign matter are retained.

The clean coolant flows to a storage area for recirculation. The filter sheet is fed through the filtering area to maintain correct coolant flow so use of the sheet is kept down to an efficient minimum. The separator measures 32 in. in overall length, 24 to 64 in. in width parallel to the drum axis and 26 in. in minimum overall height.

If you write maker identify as IEN - 13745

CLEANING . . Wet abrasive machine to clean and polish metal work pieces

Source: HYDRO-HONE MFG. CO.
6827 S. Rita Ave., Dept. B, Huntington Park, Calif.

Quick abrasive change

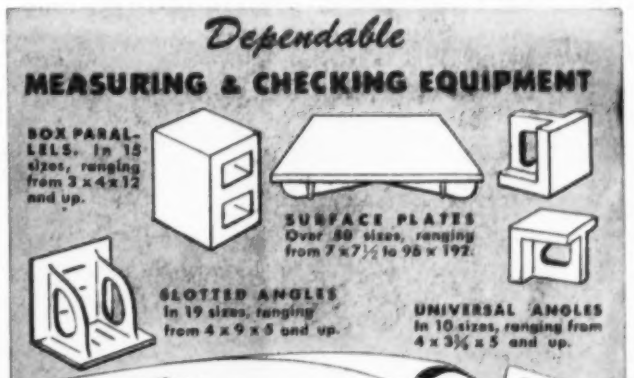
The operator of this new cleaning machine manipulates work inside the 48 by 36 by 36-in. chamber with his gauntleted hands. He controls the action of a compressed air nozzle with his foot to deliver abrasive suspended in water to remove burrs, clean surfaces, polish. The abrasive is recirculated by a packless motor driven pump.

The interior is illuminated by four 300-watt waterproof lamps. A centrifugal motor driven blower changes the air in the interior 20 times each minute. The work is clearly in view through the window at the front of the housing. Access to the interior is through a counterweighted sliding door at the housing side. Overall dimensions are 48 by 46 by 82 inches.

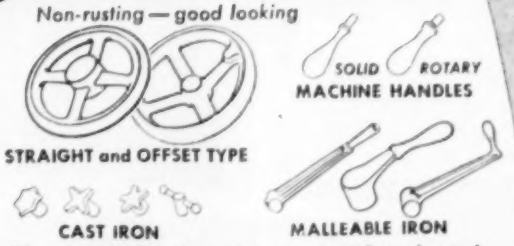
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13746

Dependable
MEASURING & CHECKING EQUIPMENT



and Now
HAND WHEELS, KNOBS, HANDLES
Cadmium Plated READY TO DELIVER
Non-rusting — good looking



Send for Complete Catalog

We also build jigs, fixtures, special tools and machinery. Send us your blueprints.

MACHINE PRODUCTS CORPORATION
6771 E. McNichols Rd. Dept. F Detroit 12, Mich.

If you write maker identify as IEN - 13747

Why run the risk of a fall on the stairs . . .
Why add to upkeep and costly repairs,
When Multigrip gives you traction assurance . . .
When Multigrip Floor Plate has rugged endurance.
Get sure-footed safety that never will cease.
Use Multigrip plate . . . watch your upkeep decrease!

U·S·S multigrip
FLOOR PLATE

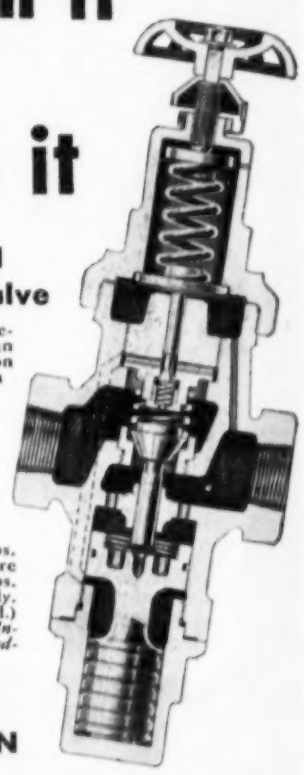
UNITED STATES STEEL CORPORATION, PITTSBURGH
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.
UNITED STATES STEEL SUPPLY DIVISION, CHICAGO
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

Sold by leading distributors from coast to coast 3-2019

UNITED STATES STEEL

If you write maker identify as IEN - 13748

Just Clean it to Maintain it



Masoneilan No. 11 Pressure Reducing Valve

Service records indicate maintenance consists of little more than keeping the moving parts clean on this better-than-ever Masoneilan Pilot Operated Steam Pressure Reducing Valve. Users tell us it's the most accurate, dependable reducing valve they've ever installed.

Sturdy. Corrosion-resistant. With wide range of reduced pressure settings. All parts may be removed with valve in the line.

Initial pressure up to 250 lbs. reduced to any desired pressure — 10 – 90 lbs. or 75 – 225 lbs. Sizes ½" to 2" with bronze body. (Also available in iron and steel.)

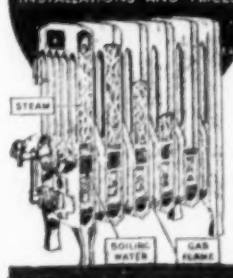
Call your local Mason-Neilan Industrial Distributor for fast, dependable service.

MASON-NEILAN
REGULATOR CO.
1180 Adams Street, Boston 24, Mass., U. S. A.

If you write maker identify as IEN - 13749

THIS OFFICE IS SO COZY AND WARM NOW, THANKS TO **CLOW** *GASTEAM RADIATORS!*

SEND FOR COMPLETE INFORMATION, INCLUDING OPERATING PRINCIPLES, INSTALLATION DATA, TYPICAL INSTALLATIONS AND PRICES



STEAM HEAT! WHERE YOU WANT IT! WHEN YOU WANT IT!

Why should your office employees suffer with the cold this winter—when it's so easy to keep them warm and comfortable with Clow Gasteam Radiators. Quick steam heat! Fingertip control! No hot water pipes, boiler or furnace room to rely on! Inexpensive, because you heat just the area where it's needed—not the whole plant.

Available for City, Butane or Propane Gas

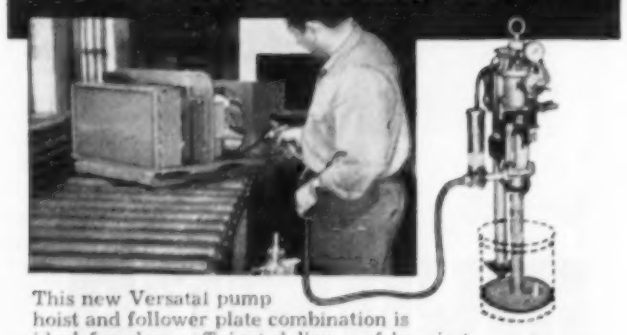
JAMES B. CLOW & SONS
201-299 N. Talman Ave., Chicago 80, Ill.

If you write maker identify as **IEN - 13750**

PUMP SEALERS

direct from 5-gallon containers

WITH NEW VERSATAL POWER RAM, JR.



This new Versatal pump hoist and follower plate combination is ideal for clean, efficient delivery of heaviest materials, such as putty, caulking, open gear coating, sand base paints—direct from original 5-gallon containers. Illustrated in use with Versatal 5-gallon Pump.

- **No waste—no messy transferring of materials!**
- **Prevents pump failure by keeping pump tube out of dirt and grit!**
- **Completely cleans and empties original container!**
- **Follower Plate fits all standard 5-gallon pails—any 11¼" diameter container!**

Contact the Alemite Supplier nearest you—or write direct for FREE complete information!

1830 Diversey Parkway
Chicago 14, Illinois

STEWART SW WARNER ALEMITE Versatal SPRAY PUMP EQUIPMENT

If you write maker identify as **IEN - 13751**

faster, more positive selection of stainless electrodes...

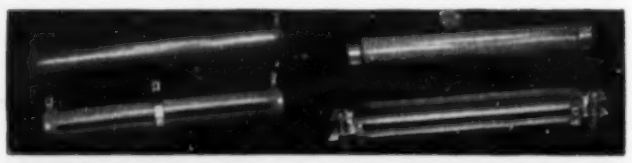
this FREE folder helps you choose the right weld metal when welding...

If you do any maintenance or repair welding on stainless steel(s), you'll be glad for this practical information. All you need know is the "A.I.S.I." type, or "trade name" of the steel to be welded . . . or the properties required. The folder quickly tells you the proper electrode to use! It's based upon years of Arcos research and field work that assures you physically, chemically and metallurgically sound weld metal on every job.

- **Stainless or Alloy steels**
- **"A.I.S.I." type numbered steels**
- **Dissimilar metals**
- **Stainless Clad steels**
- **"Trade-named" steels**
- **To meet corrosion, heat, or strength properties**
- **SEND FOR YOUR COPY TODAY! Ask for folder, "What Electrode Would You Use?"**

ARCOS CORPORATION
1500 South 50th Street • Philadelphia 43, Pa.

If you write maker identify as **IEN - 13752**



TWO YEARS FIELD EXPERIENCE WINS TITLE..."H-H LONG-LIFE RESISTORS"

The greatly increased protection made possible by the development of our *high-temperature* gray enamel is the most important improvement of these resistors, but it is not all. True, this enamel is thermo-shock-proof and crazeless; but in addition

THESE RESISTORS OFFER . . .

- **Stronger core with higher resistance to vibration and shock.**
- **Finer resistance wire—made to H-H specifications, especially adapted to these resistors. More uniformly wound, so that failures under stress are eliminated.**
- **Special alloy terminals more securely fastened to the ceramic body by spot-welding—highly resistant to corrosion.**
- **All wire connections are protected by a positive non-corrosive bonding.**

The fixed, the ferrule and the flat types are especially designed for and manufactured in accordance with JAN-R-26A specifications.

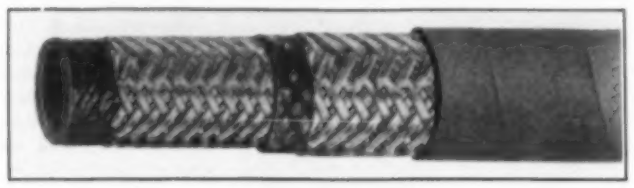
Rheostats and Resistors **HARDWICK, HINDLE, INC.**
Subsidiary of **THE NATIONAL LOCK WASHER COMPANY**
Established 1886
Newark 5, N. J. U. S. A.
the mark of quality
for more than a quarter of a century

Hardwick, Hindle, Inc., 40 Hermon St., Newark 5, N. J.
Please send additional information about your new resistors and rheostats.
Name_____
Title_____
Company_____
Address_____

If you write maker identify as **IEN - 13753**

HOSE . . Synthetic rubber for freon, lacquer, kerosene, solvents

Source: QUAKER RUBBER CORP.
Comly & Tacony Sts., Philadelphia 24, Pa.



Leakproof and flexible

Qua-Seal is a new hose employing a synthetic rubber tube reinforced with two layers of braided textile and an outer abrasion resistant cover. It is designed particularly to carry freon refrigerant gas in a temperature range such as that found in both the suction and discharge sides of a refrigerator compressor. It is suited for working pressure to 400 pounds. Five sizes range from ¼ to 1 in. in inside diameter.

If you write maker identify as **IEN - 13754**

DRAFTING . . Tracing cloth erases easily and prints at high speeds

Source: FREDERICK POST CO.
3652 N. Avondale Ave., Chicago 18, Ill.

Triple protected against moisture

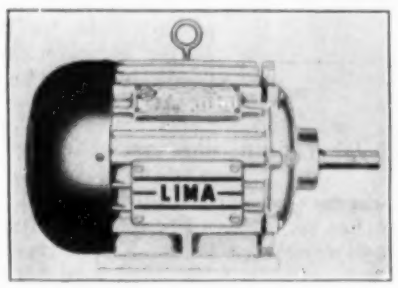
Reproduction Cloth, one of the products in the company's line of drafting supplies, has been improved recently. Transparency has been increased 25 per cent by a process that also waterproofs the cloth without sacrificing flexibility. Erasing qualities have been improved so changes and corrections can be made.

Packaging is in a polyethylene bag that protects the original roll prior to its use and also protects unused portions. A wrapper, coated with a polyethylene film, surrounds the bag. A small package of moisture absorbing silica gel is packed in the core of the roll.

If you write maker identify as **IEN - 13755**

MOTOR . . Polyphase induction, totally enclosed, rates ¾ to 20 hp.

Source: LIMA ELECTRIC MOTOR CO.
Findlay Road, Dept. 62, Lima, Ohio



Mounts in any position

Cast iron frame with integral cooling ribs, factory lubricated sealed ball bearings, cast aluminum fan that blows air along the ribs, totally enclosed interior characterize this new motor. It is available in all the NEMA frame sizes 224 to 326. Ratings are ¾ hp. at 900 rpm. to 20 hp. at 3,600 rpm. on two or three-phase ac. to 600 volts as a maximum.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

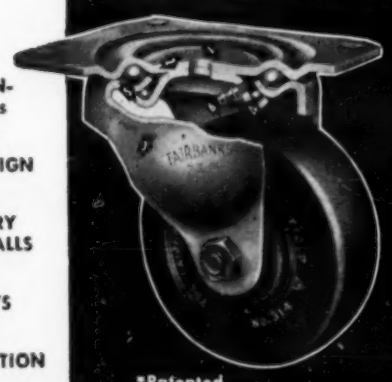
If you write maker identify as **IEN - 13756**

NEW Fairbanks Series "23" Double Ball Race SWIVEL CASTER

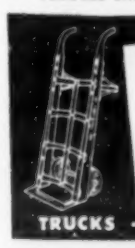
STRONGER ON EVERY POINT

The NEW Fairbanks Series "23" Double Ball Race Swivel Caster* line is designed for greater load carrying capacity in the medium duty field.

- **NO KING-PIN it's eliminated!**
- **"LOCK-WELD" CONSTRUCTION retains perfect alignment!**
- **PATENTED LEG DESIGN resists distortion!**
- **LARGER SECONDARY RACEWAY AND BALLS work easier!**
- **COINED RACEWAYS improve with use!**
- **PRESSURE LUBRICATION reduces friction!**



*Patented



THE **Fairbanks** COMPANY
393 LAFAYETTE STREET, NEW YORK 3, N. Y.
BRANCHES: Boston 10 • Pittsburgh 22 • New York 3 • Rome, Ga.

TRUCKS • VALVES • DART & PIC UNIONS • CASTERS

If you write maker identify as **IEN - 13757**

FREE *Send for your copy today*

NOW • • • You can choose the RIGHT Industrial Work Glove for EACH Job . . .

by using the handy Hood Performance Chart

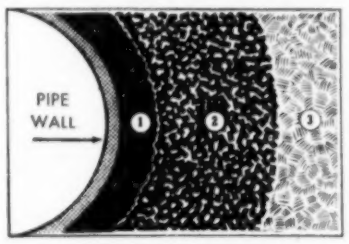
Chart shows comparative wear and chemical resistance of Hood Neoprene, Rubber and Plastic Coated Gloves; catalog contains eleven more pages of illustrations and description of Hood Industrial Gloves; the choice for *every* job in *any* industry.

HOOD RUBBER CO.
Watertown, Mass.

If you write maker identify as **IEN - 13758**

GILSULATE*

the revolutionary new Triple-Zone insulation for hot underground pipes. Lowest cost per installed linear foot.



Zone 1: First line of defense against heat loss, corrosion, moisture: a dense semi-plastic core fused on by pipe's own heat.
Zone 2: Second line of defense against heat loss and water: a sintered zone of Gilsulate particles.
Zone 3: A zone of unfused Gilsulate providing final margin of thermal insulation with high load-carrying capacity.

Gilsulate granules fuse into lifetime protection on hot underground pipes; keep them insulated, water-proof, corrosion-proof, root-proof, acid/alkali-proof.

Gilsulate is easy to use:
1. Pour Gilsulate granules out of bag onto pipe.
2. Tamp down and backfill: *the job is insulated!*

Gilsulate has been tested in scores of the country's largest and most important installations. It needs no sleeves or mechanical sheaths. It requires no mixing or special handling. It can't be punctured, doesn't require removal of rocks from backfill. It can't tear or puncture pipe since it contracts and expands with the pipe.

Write for descriptive literature

AMERICAN GILSONITE COMPANY
248 S. Main St., Salt Lake City 1, Utah
or 1145 E. Jersey St., Elizabeth 4, N. J.
Affiliate of Barber Oil Corporation and Standard Oil Company of California

If you write maker identify as **IEN - 13759**

WORK INSPECTION MIRRORS

speed production • prevent accidents

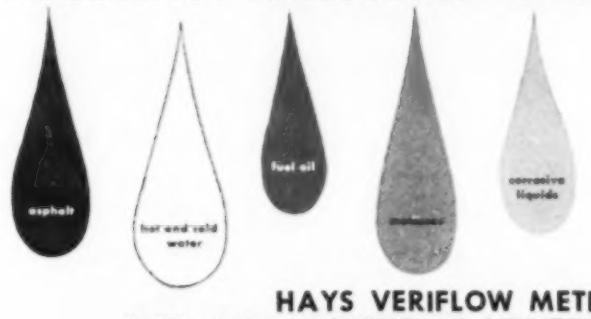
- **Exclusive All-Angle Ball Joints**
- **Precision Engineered**
- **Replaceable Copper-Backed Clear View Mirrors**
- **Folds and Fits into Pocket**
- **Many Sizes Cover Practically All Applications**

WRITE FOR YOUR COPY OF COMPLETE ILLUSTRATED CATALOG 1

ULLMAN PRODUCTS CORPORATION
17 RIVER STREET • NORWALK, CONNECTICUT

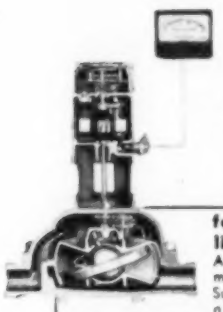
If you write maker identify as IEN - 13760

viscosities unlimited



HAYS VERIFLOW METER AND HAYS ELECTRONIC VERITROL

indicate and control liquid flow



Now virtually all fluids can be precisely measured and controlled—*from a remote position.*

Hays VERIFLOW meter accurately measures, indicates, and totals the flow of corrosive and hard-to-meter liquids without using weigh tanks, orifice plates, or gage sticks. With the Hays VERITROL you simply set a knob at the rate of flow desired . . . then, the VERITROL controls the flow of liquid at that set-rate. *Send for Pub. No. 53-766-38.*

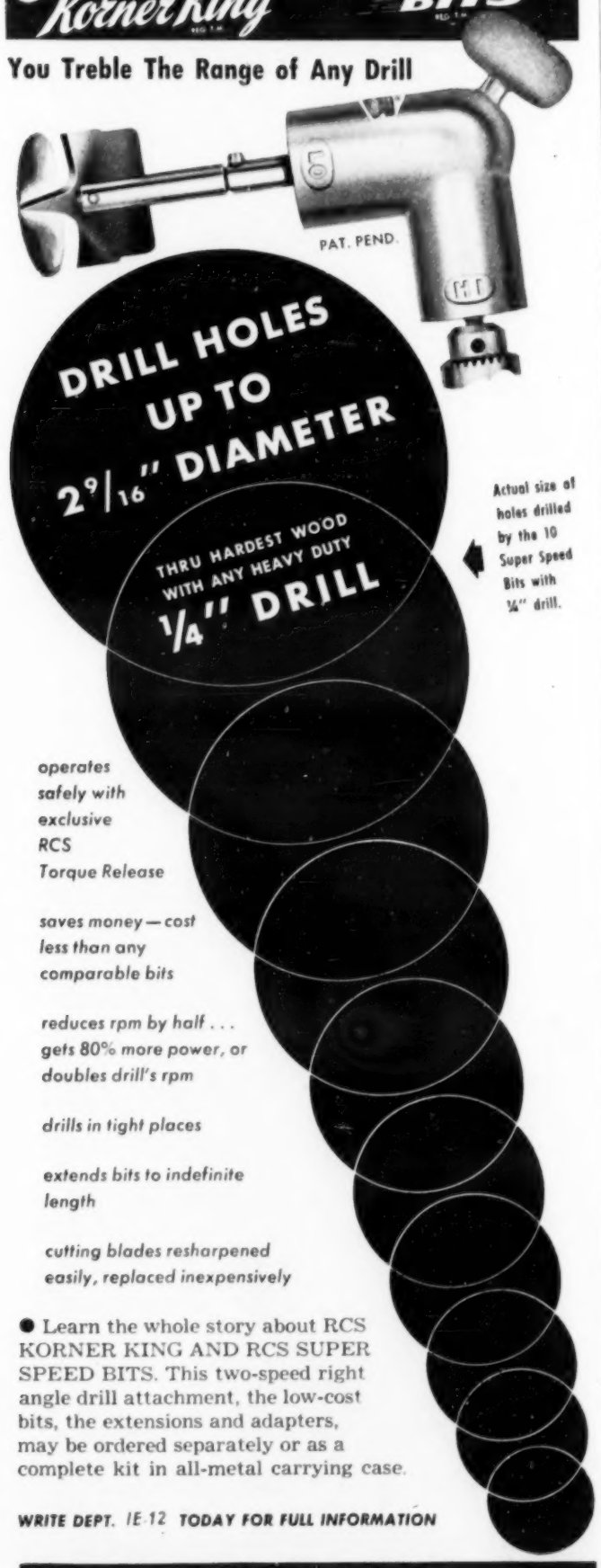
for corrosive liquids
Acetic Acid, Aluminum Potassium Sulphate, Ammonia, Calcium Compounds, Carbolic Acid, Formaldehyde, Fruit and Vegetable Juices, Hydrogen Peroxide, Phosphoric Acid, Potassium Hydroxide, Sodium Compounds, Sulphuric Acid (concentrated), Stearic Acid, and many others.

THE hays CORPORATION
Michigan City 16, Indiana

If you write maker identify as IEN - 13761

WITH THE NEW RCS Korner King and RCS Super Speed BITS

You Treble The Range of Any Drill



operates safely with exclusive RCS Torque Release

saves money—cost less than any comparable bits

reduces rpm by half . . . gets 80% more power, or doubles drill's rpm

drills in tight places

extends bits to indefinite length

cutting blades resharpened easily, replaced inexpensively

● Learn the whole story about RCS KORNER KING AND RCS SUPER SPEED BITS. This two-speed right angle drill attachment, the low-cost bits, the extensions and adapters, may be ordered separately or as a complete kit in all-metal carrying case.

WRITE DEPT. IE-12 TODAY FOR FULL INFORMATION

RCS TOOL SALES CORPORATION JOLIET, ILLINOIS, U. S. A.

If you write maker identify as IEN - 13763

TESTING . . Strain gage load cells to measure forces and weights exactly

Source: BALDWIN-LIMA-HAMILTON CORP. Paschall Post Office, Philadelphia 42, Pa.

For static weighing, thrust testing

Two new series, precision and extra precision Type SR-4 load cells, have been added to the company's line of testing equipment, previously described IEN-4139-51. The new line includes 18 compression units in 9 capacities ranging from 500 to 200,000 lb. and 16 tension units in 8 capacities ranging from 500 to 100,000 pounds. Both new series are mechanically and electrically interchangeable with standard cells. The essential difference is in the finer tolerances to which the cells are calibrated and temperature compensated.

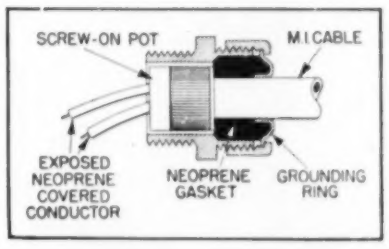
The SR-4 strain gage is sealed within the cylindrical housing. In each case, slight variation of gage length and corresponding change in electrical resistance results under loading. This change is amplified electronically and is employed to actuate indicators, recorders or controllers depending on the individual test set-up.

Compression cells range in size from about 4¾ to 11⅝ in. in height and from 3 to 8 in. in diameter. Tension cells range from about 4½ to 17¾ in. in overall height and from 3 to 9 in. in diameter. All are supplied with four-conductor shielded color coded anhydrex cable measuring 10 ft. in length.

If you write maker identify as IEN - 13764

CONNECTOR . . Water tight fitting for mineral insulated electric cable

Source: THOMAS & BETTS CO. 60-A Butler St., Elizabeth, N. J.



Sealed conductors

Three sizes are included in this new line of fittings to apply on mineral insulated cable from 0.309 to 0.730 in. in diameter. Each seals the end of the cable in water tight assembly and grounds its outer metal sheath. The grounding ring provides an electrical path around the neoprene gasket to the metallic body of the fitting.

The cable consists of one to seven solid conductors, with individual neoprene insulation, spaced and insulated by magnesium oxide inside a seamless metal sheath. The construction will withstand high temperature. It is gas and water tight, corrosion resistant, compact and free from condensation. It is particularly suited for use in plants where there is a large amount of moisture. Each fitting assembly includes a plastic filled pot that is fastened to the cable end to seal out moisture. The fitting encloses and protects this pot.

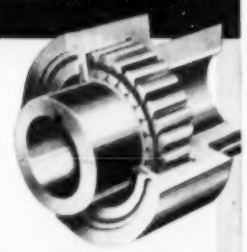
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13765

THE FULL COMPLEMENT SPRAG-TYPE CLUTCH

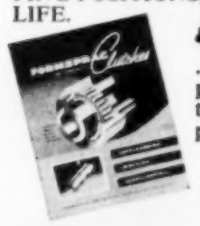
DESIGN ENGINEERS EVERYWHERE ARE SPECIFYING IT

Designers of equipment using over-running clutches are specifying Formsprag Clutches. Because: They've found out what a sprag is . . . What Full Complement means . . . Why that principle provides MAXIMUM TORQUE CAPACITY (for size and weight), INFINITE NUMBER OF GRIPPING POSITIONS, LONGER LIFE.



OVER-RUNNING
INDEXING (Feeding)
BACKSTOPPING

FOR YOUR FILES



. . . all the answers on the above plus engineering data, applications, etc. Write for this new 10-page illustrated brochure today.

FORMSPRAG COMPANY
23591 HOOVER ROAD
Van Dyke, Michigan

FULL COMPLEMENT FORMSPRAG Clutches DISTRIBUTORS IN PRINCIPAL CITIES

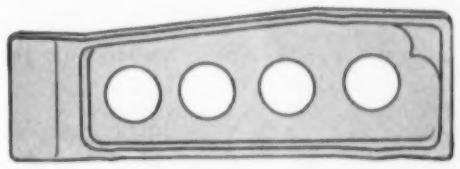
If you write maker identify as IEN - 13766

MUELLER BRASS CO.

ALUMINUM FORGINGS

- STRONG AS STEEL BUT 1/3 THE WEIGHT.
- GOOD DIMENSIONAL STABILITY . . . MECHANICAL PROPERTIES RETAINED AT HIGH SPEEDS AND REASONABLE TEMPERATURES.
- REQUIRE LESS MACHINING AND FINISHING.
- FORGED TO YOUR SPECIFICATIONS.

MUELLER BRASS CO. • PORT HURON 26, MICHIGAN



102

If you write maker identify as IEN - 13767

designing a better product WITH TUBING

Factual, helpful information for designers, fabricators, and finishers of machines, parts, products, and structural components . . . the why, how, and wherefore of B&W Tubing to meet your mechanical requirements.

Write for B&W Bulletin TB-361

TA-1809(LM)

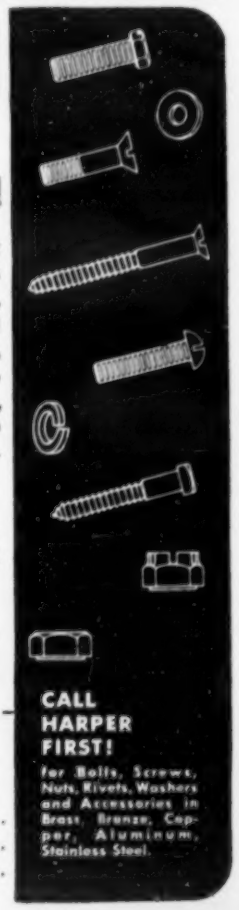
THE BABCOCK & WILCOX COMPANY
TUBULAR PRODUCTS DIVISION
Beaver Falls, Pa. — Seamless Tubing, Welded Stainless Steel Tubing
Alliance, Ohio—Welded Carbon Steel Tubing

If you write maker identify as IEN - 13768

HARPER

Specialist in *all* Non-Corrosive Fastenings!

Call Harper *first!* America's largest producer of non-ferrous and stainless steel fastenings—specializing in bolts, screws, nuts, rivets, washers and accessories in brass, bronze, copper, aluminum, Monel, stainless steel—to solve your problems in corrosion, heat, abrasion and stress. Over 7,000 items stocked by warehouses and distributors from coast to coast.



HARPER
EVERLASTING FASTENINGS

FREE—*this 56-page Harper Price List and Stock Book.*

The H. M. Harper Company
8211 Lehigh Ave.,
Morton Grove, Ill.
Rush Harper Price List and Stock Book.
Name.....
Address.....
City.....State.....

CALL HARPER FIRST!
for Bolts, Screws, Nuts, Rivets, Washers and Accessories in Brass, Bronze, Copper, Aluminum, Stainless Steel.

If you write maker identify as **IEN - 13769**

LET DOLGE MAKE a scientific, factual SANITARY SURVEY of your Premises at NO cost to you!

Here's what we do—

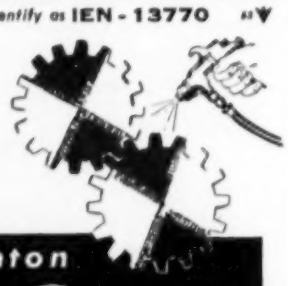
1. Your Dolge Service Man inspects your premises and sends his complete record to our home office;
2. Our technological staff analyzes your sanitary maintenance problems. You receive, without charge or obligation, a complete and detailed report;
3. Where the use of Dolge products is indicated, and where you accept our recommendations, your Dolge Service Man "follows through" in instructing your staff and returning for periodic reinspection.

Please write for Dolge Sanitary Survey booklet.

Dependable **DOLGE**
WESTPORT, CONNECTICUT

If you write maker identify as **IEN - 13770**

Adheres to gears longer—reduces lubricating costs!



Try NEW Houghton
TENAC
the tenacious open gear and cable lubricant

3 GRADES
TENAC L — light
TENAC M — medium
TENAC H — heavy

- No preheating necessary
- Fast-setting, non-brittle film won't flake off
- Easily applied by brush, spray, drip feed, or swab
- High lubricity and oiliness
- Water resistant—corrosion resistant
- Remains fluid in storage
- High penetration ability
- No chlorinated or toxic dilutions
- High flash point reduces evaporation and fire hazard

Get full details and prices from the Houghton Man or write E. F. Houghton & Co., 303 W. Lehigh Ave., Phila. 33, Pa.

Products of . . .
E F HOUGHTON & CO.
PHILADELPHIA · CHICAGO · DETROIT · SAN FRANCISCO

Ready to give you on-the-job service . . .

If you write maker identify as **IEN - 13771**

FREE SAMPLE

- Makes and keeps belts soft and pliable
- *Pliable* belt "clings" to "surface" of pulley
- Dissolves hard "glaze" that makes belts slip
- *Only* belt preservative that has met and passed U. S. Government Tests and Requirements
- Sold with money-back guarantee since 1896

Cling-Surface Company, Inc.
1044 Niagara Street • Buffalo, New York
Please send me FREE sample can of Cling-Surface "50" Belt Preservative
Name.....
Title.....
Company.....
City.....State.....

IDEAS FOR YOU

Items of particular interest in the news other than straight new products, development pointing toward the future, unusual procedure to accomplish a point, suggestions for practical action, each to provide ideas for you.

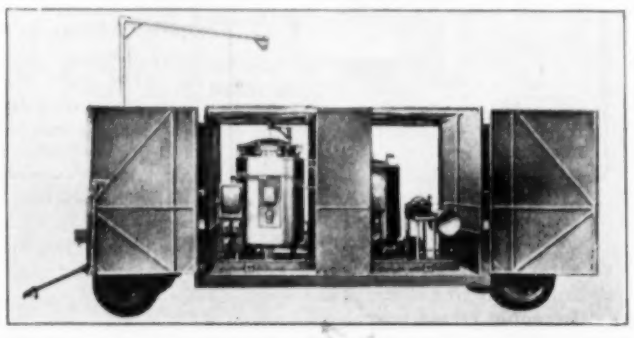
If you write maker identify as **IEN - 13772**

Bakelite polyethylene is employed to produce liners for light weight steel drums, in capacities from 5 to 55 gal., to ship in-

dustrial acids and bulk chemicals. The non-shattering liner fits inside the steel shell. It is resistant to corrosive action by industrial chemicals such as muriatic, hydrofluoric. It also will handle caustic soda solutions and electrolyte fluid. Side wall thickness of the plastic material is $\frac{1}{16}$ inch. The top and bottom are a little heavier. Two heavy-duty flanges of the same material provide standard thread openings for 2-in. and 3-in. drum plugs. The plastic is being molded and distributed by Delaware Barrel & Drum Company. Bakelite Co., 30 E. 42nd St., Dept. IEN, New York 17, N. Y., can supply details on properties and applications.

If you write maker identify as **IEN - 13773**

Oil conditioning equipment to service transformers is now available in mobile assembly to move from one location to an-

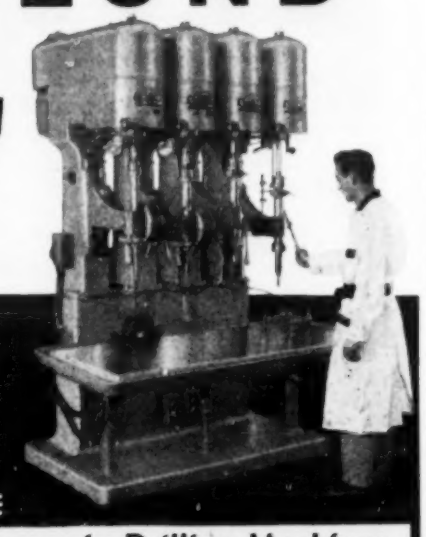


other. The equipment can recondition the transformer oil without taking the transformer off the line. It includes the necessary handling equipment and means for connection to draw off the transformer oil and to return it. Each assembly is built to order by U. S. Hoffman Machinery Corp., 221 Lamson St., Dept. IEN, Syracuse 6, N. Y.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 13774**

EDLUND
2F *Infinitely Variable Speed*



INCREASED PRODUCTION
MAXIMUM TOOL LIFE
PRECISION PERFORMANCE

Greatest Advance in Drilling Machines . . . in Past 25 Years

The Edlund new Model 2F with infinitely variable speeds, gives your operator an infinite number of speeds within a broad range. This means **correct speed for maximum tool life and greatest production.** Speed changes are made instantly without stopping. Convenient controls for easier operation and rigid construction with ample work table area assure precision performance. For complete specifications, write for Bulletin 140.

EDLUND Dealer Representation in Major Cities
Machinery Co., Cortland, N.Y., U.S.A.
Division Bradley Edlund Corp. Affiliated with Precision Castings Co., Inc.

If you write maker identify as **IEN - 13775**

DELRAC *Resiment*
the Furane Resin Cement that

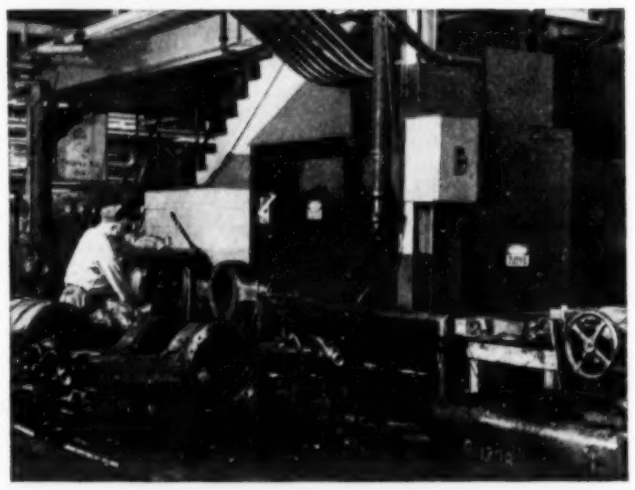
- **RESISTS CORROSION—** Acids, Alkalies, Solvents
- **SETS PERFECTLY—** Summer or Winter
- **WITHSTANDS HEAT—** Temperatures up to 375° F.

Highly efficient as a mortar for corrosion-resistant masonry, Resiment is low in porosity and high in compressive and tensile strength. It is supplied in the form of powder and liquid, in proper combinations, for mixing at time of use. Sets quickly by internal chemical reaction.

Write for Folder and Prices
DELRAC CORPORATION
132 Mill St. Watertown, N. Y.

If you write maker identify as **IEN - 13776**

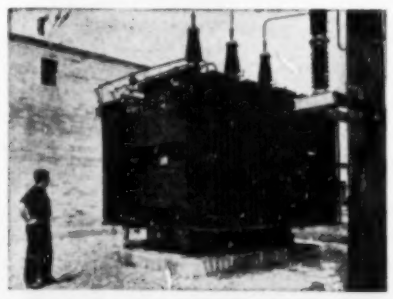
POWER
where and as needed . . .



Above—one of the two 2,000 KVA unit substations powered by an Uptegraff Dry Type Transformer, located near the assembly line.

with
UPTEGRAFF TRANSFORMERS

Located close to the center of their electrical loads, the Uptegraff Dry Type Transformers shown here serve efficiently in the Newark, Ohio plant of the Ohio Gear and Axle Division of Timken-Detroit Axle Company. Line losses are reduced by the central location of the transformers, and power characteristics are improved. In this plant are two 2000 KVA and two 1000 KVA dry type Uptegraff Transformers. Supplying these indoor dry type Uptegraff transformers is a 6000 KVA oil-cooled Outdoor Power Transformer.

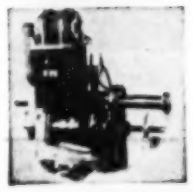


6000 KVA Uptegraff Outdoor Power Transformer supplying the entire plant is shown at the left.

R. E. Uptegraff Manufacturing Co.
Scottdale, Pennsylvania

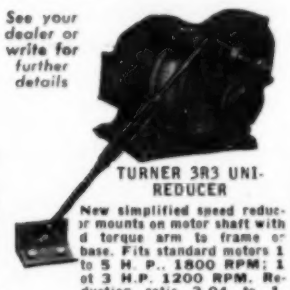
If you write maker identify as IEN - 13778

Sure! Turner can furnish ordinary 3 or 4 speed transmissions — BUT . . . Turner can ALSO furnish 6 or 9 speeds for AS LITTLE AS $10 to $20 ADDITIONAL . . .



Now, for slight added cost you can have 6 or 9 speeds at the "twist of a wrist." Models range from fractional to 60 H.P. Wide range of applications on machine tools as well as other equipment. Write for specification and descriptive catalog.

See your dealer or write for further details



TURNER 3R3 UNI-REDUCER

New simplified speed reducer mounts on motor shaft with a torque arm to frame or base. Fits standard motors 1 to 5 H. P., 1800 RPM; 1 at 3 H.P. 1200 RPM. Reduction ratio 3.04 to 1. Write for information.

TURNER UNI-DRIVE Company

3479 Terrace Street Kansas City 8, Missouri

If you write maker identify as IEN - 13779

it's here...

The NEW, REVOLUTIONARY Collapsible "PHIL-BOX"

Collapses from 28⅞" to 9 1/16" in Height

Sides are collapsed and placed in upright position ... in less than 20 seconds!

MODEL B-50

The new Phillips collapsible 5000 lb. capacity material handling "Phil-Box" is designed for saving space in storing and transporting bulk materials and parts. Quickly and easily collapsed or erected, the box interior measures 49" x 37" x 24". The "Phil-Box" has no pins or loose parts. Made of heavy gauge corrugated steel, it is of all welded construction—with smooth rolled edges for maximum safety. Can be stacked in collapsed or upright position. Fork lift or pallet truck can enter from all four sides for easy lifting.

Boxes stacked in collapsed position.

Boxes stacked in upright position.

Write for Bulletin E-14

MANUFACTURERS SINCE 1863 PHILLIPS MINE AND MILL SUPPLY COMPANY PITTSBURGH, PA.

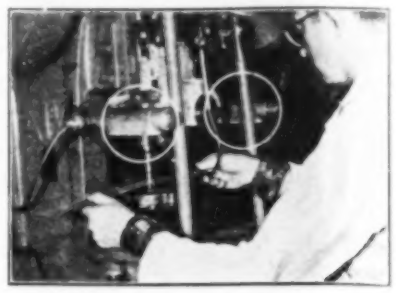
MATERIALS HANDLING EQUIPMENT

2500 JANE STREET • PITTSBURGH 3, PA.

IDEAS FOR YOU—Continued

If you write maker identify as IEN - 13781

New combination of operator wrist bands, containing radio-active crystals, and Geiger tubes protects the operator at a punch press. The tubes pick up radiation from the wrist bands to stop the press if the operator's hands move into the dangerous area. At the same time, a press equipped with the new protection device will not run unless the operator is wearing the bands, since an impulse from the radio-active crystals is required to "trigger" the machine. Within 15 sec. after the wrist bands are withdrawn the machine shuts off. The bands are harmless to the user. Installation on a punch press costs about $800. Write Hazatrol Inc., 1558 Oakwood Ave., Dept. IEN, Berkeley, Calif.

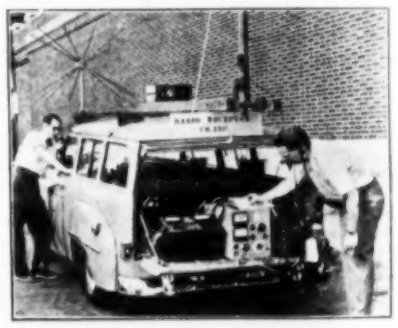


If you write maker identify as IEN - 13782

Horsehair bristles are laid uniformly, trimmed for stiffness, and locked in a twisted wire handle of a new brush that has been designed particularly to clean leader pin holes in die sets. By applying it each time a die set is installed, it is possible to keep out dust, dirt, grit and abrasive residues for long life and accurate operation. The brush is available in ⅞ to 2¾ in. in diameter. It is about 10½ in. in length. It is packed one dozen to a box at $3 per dozen to 1¾ in. and at $4.80 per dozen for 2 to 2¾ in. in diameter. Manufacturer is Biltwell Brush & Mfg. Co., 225 S. Church St., Dept. IEN, Rockford, Illinois.

If you write maker identify as IEN - 13783

Radio Receptor Co., 251 W. 19th St., Dept. IEN, New York 11, N. Y., has equipped a number of station wagons with instruments to test compliance with Section 18 of the FCC regulations on radio interference. Each station wagon has a two-man crew and can cover a considerable area around a plant suspected of originating interference. The units will pin point the trouble to determine if the plant equipment is actually at fault. If it is not the company is authorized to issue certification showing compliance with the regulations. In the event of interference, the company engineers can suggest shielding to remove the difficulty.



All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13784

Specify GM PRECISION-ENGINEERED SERVO MOTORS

RELIABLE PERFORMANCE
RUGGED CONSTRUCTION

ACTUAL SIZE

In the operation of—
- GUNFIRE CONTROLS
- ROCKET CONTROLS
- GUIDED MISSILES
- AIRCRAFT CONTROLS
- INDUSTRIAL CONTROLS

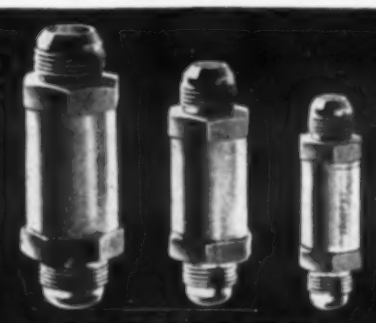
G-M Servo Motors can be supplied to meet rigid military specifications with regard to humidity, temperature range, vibration and altitude. Available in 2, 4 or 8 pole construction and for frequencies from 60 to 400 cycles.

Write today for complete information.

Another product of GM LABORATORIES • Inc.

4334 NORTH KNOX AVENUE, CHICAGO 41, ILLINOIS

If you write maker identify as IEN - 13785



KOHLER PRECISION CONTROLS

For check valves that are positive, specify Kohler. Series K-1207 hydraulic check valves in sizes from ¼" x 1" solve requirements for CHECK VALVES THAT CHECK. These valves, or their modifications, are used in hydraulic actuating lines for airplane landing gear, for machine tools, and for forked lift trucks. Precision lapped, their positive checking action prevents leakage and insures long service life.

Kohler Co., Kohler, Wisconsin. Established 1873

KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS
AIR-COOLED ENGINES • PRECISION CONTROLS

If you write maker identify as IEN - 13786

run d-c motors from a-c lines

with Variac Motor Speed Controls

- ★ 4 Models from 1/15 to 3/4 h-p DC Motors
- ★ Extra Fast Start-Stop-Reverse
- ★ No Electronic Tubes —no Warm-up Required
- ★ Speed Range 5-10 rpm to 15% Above Rated
- ★ No Jumpiness Even at Lowest Speeds
- ★ Good Regulation
- ★ High Starting Torque
- ★ Simple Installation —at Machine if Desired
- ★ Easy Maintenance
- ★ Low First Cost

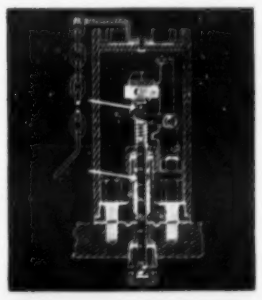
Write for the VARIAC Speed Control Bulletin

GENERAL RADIO Company 275 Massachusetts Ave. Cambridge 39, Mass.
90 West St. NEW YORK 6 • 920 South Michigan Ave. CHICAGO 5
1000 North Seward St. LOS ANGELES 38

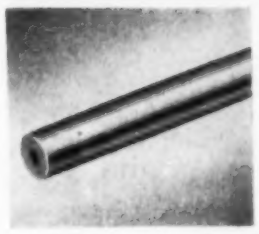
If you write maker identify as IEN - 13787

Tube Talk THE "HOW-TO" COLUMN

PROBLEM: Tubing required for "gauge rods" of tank car gauges made by Metal Goods Manufacturing Co., Bartlesville, Okla. Accurate, safe measurement of "pressure liquids" such as propane, butane, etc. demands heavy wall tubes that are smooth and precise for a perfect seal.



SOLUTION: Superior 304 Seamless Stainless Steel Tubing—9/16" O.D. with 3/16" wall.



RESULT: Customer states Superior tubing is "free from drawing marks and other imperfections"—"unmatched for precision and excellence of finish"—"plays important part in assuring accurate measurement—and in keeping cars on open track—with safety and reliability."

Suggestion—Write for information and literature today.

SUPERIOR TUBE COMPANY

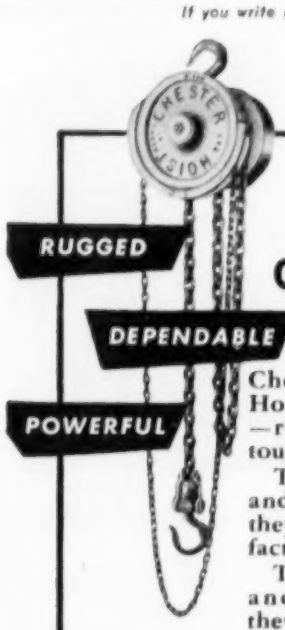
2016 Germantown Ave., Norristown, Pa.

If you write maker identify as IEN - 13788

From 6" to 24.5" Rubber Tire Diameters.
Pneumatic — Drop Center and Demountable Rim.
Cushion and Solid Rubber Bolted Types.
Heavy Duty Wheels with Molded-on rubber.

DICO COMPANY Let DICO help you with your wheel problems. Write for complete catalog.
202 S.W. 16th ST., DES MOINES, IOWA

If you write maker identify as IEN - 13789



RUGGED
DEPENDABLE
POWERFUL

Spur-Geared CHESTER HOISTS

Chester Spur-Geared Chain Hoists are made for hard work—ruggedly built to do your tough lifting jobs efficiently.

They're safe for your men and equipment, too, because they're actually built to a safety factor of 5 times their rated load.

They operate more smoothly and wear longer, because they're Timken Tapered Bearing equipped.

Capacities, ¼ to 25 ton in standard Spur-Geared . . . quickly available, also, the Chester specials including Low Headroom, Extended Handwheel, and others. Ask your distributor . . . or write for complete catalog and tell us your requirements.

CHESTER HOIST DIVISION
The National Screw & Mfg. Company
Lisbon, Ohio

If you write maker identify as IEN - 13790

with AURAND CLEANING TOOLS

Clean off accumulation of scale, paint, rust or any foreign matter from any hard surface with Aurand Cleaning Tools. Toothed cutting wheels, loose pinioned on rotating head chip away accumulations at high speed. Positive depth shoe prevents cutting into permanent surface and assures uniform cleaning of entire area.

Two sizes in electric or pneumatic models.

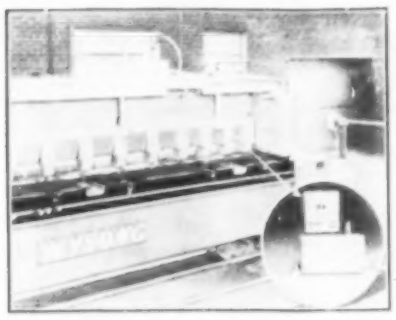
FOR FULL DETAILS, WRITE DEPT. 649

AURAND MFG. & EQUIP. CO.
2643 Colerain Avenue • CINCINNATI, OHIO

If you write maker identify as IEN - 13791

GAGE . . Dial type indicator reads back gage position on a shear

Source: DURANT MFG. CO.
1930 N. Buffum St., Milwaukee 1, Wis.



Operator stays out front

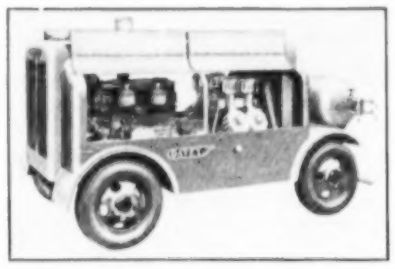
Illustrated is a typical application of the company's new back gage position indicator on a power squaring shear. The new unit is mounted on the machine housing beside the push button control for the power operated gage adjusting drive. The indicator itself is mechanically connected to the back gage to provide a continuous reading of the gage position.

The indicator reads inches and fractions. It can be specified to read 64ths or 100ths of an inch. A circular convex magnifying lens over the number wheels and dial permits reading at a distance. Overall dimensions are 4 by 2½ by 4¾ inches. One revolution of the indicator shaft reads 1 inch.

If you write maker identify as IEN - 13792

COMPRESSOR . . Two stage mobile, diesel driven, has 600 cfm. rating

Source: DAVEY COMPRESSOR CO.
264-68 N. Water St., Kent, Ohio



Delivers to receiver

Super Chief 600 is a new diesel driven wheel or skid mounted compressor employing four low pressure cylinders with 8-in. bore and two high pressure cylinders with 6⅝-in. bore. Stroke is 4 inches. The trailer assembly illustrated measures 150 by 75 by 95 inches. It weighs 9,300 pounds. The skid assembly measures 150 by 63 by 69 inches and weighs approximately 8,700 pounds.

Equipment includes automatic compressor and engine controls, finned air cooled separately replaceable cylinders, force feed lubrication, cast aluminum crankcase, multi-port valves, automotive type steering on the wheel mounted assembly with spring suspension, built-in tool boxes and an air receiver.

If you write maker identify as IEN - 13793

"Creative reading" to relieve busy scientific and management personnel by providing comprehensive reviews and publishing them as abstract bulletins, together with "Externalized Memory", to make use of the newly designed electronic equipment that searches at high speed and low cost through accumulated files of coded abstracts, are explained in two new information papers published by Battelle Memorial Institute, 505 King Ave., Dept. IEN, Columbus 1, Ohio. Copies are available upon request. Ask for "Information Services Papers".

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13794

The All New MOBILIFT 4000 Pounder

Has *Everything* You Want in a "Sit-Down" FORK LIFT TRUCK

MODEL D-424
4,000 lbs. capacity at 24" Load Center
83" hydraulic mast lift height 108"

Check these trend-setting features . . .

- CHRYSLER 65-bhp 6 cyl. GAS ENGINE.
- CHRYSLER GYROL FLUID COUPLING.
- MOBILIFT CONSTANT-MESH TRANSMISSION with a Push-Pull Lev-R-Matic Control for forward and reverse—No Clutch Pedal—No Gears to Shift—2 speeds forward, 2 reverse.
- MOBILIFT FULL-FLOATING DRIVE AXLE.
- BALL-BEARING WORM & NUT TYPE STEERING.
- HYDRAULIC BRAKES.
- EASY TO GET ON AND OFF—NO OBSTRUCTIONS.
- FREE ACCESS FROM LEFT OR RIGHT SIDE.
- ONE-PIECE HOOD RAISES FOR EASY SERVICE ACCESSIBILITY.

Write for complete details

MOBILIFT CORPORATION
835 S. E. MAIN STREET, PORTLAND 14, OREGON
2317 W. 18TH, CHICAGO • 730 PATTERSON, E. RUTHERFORD, N. J.
2724 TAYLOR STREET, DALLAS • 2730 SAN PABLO AVE., BERKELEY
1113 SPRING STREET, N.W., ATLANTA

If you write maker identify as IEN - 13795

2 Seconds CAN SAVE YOU TWO HOURS!

Adjusting bevel gear mesh with a laminated shim is a matter of two seconds to remove a lamination!

The shim in this case is made of LAMINUM®, our exclusive material. It is a "solid" unit built up of 16 layers of .002 brass. It peels quickly and easily. Each shim removed adjusts the bevel gear position by two thousandths.

You save time by easier machining tolerances on the housing; ***you save time*** by eliminating pesky assembly machining; ***you save*** by not tying up a machine intermittently. IT'S EASIER!

LAMINATED SHIM COMPANY, INC.

SEND FOR LITERATURE

SHIM HEADQUARTERS SINCE 1913

Check Our Stampings Division For Your Stamped Parts Requirements

2112 UNION STREET • GLENBROOK, CONNECTICUT

If you write maker identify as IEN - 13796

ACUSHNET has developed rubber stocks with properties that permit sustained flexibility at unusually high or low temperatures, and high resistance to fluids, greases and gases. Our precision-molded boots, bellows and tubes give enduring protection to moving parts by excluding dirt, water, oil, etc.,—retaining grease, oil, fuel—or performing both functions at the same time over long periods of flexing.

Send For your copy of the Acushnet Rubber Data Handbook

Acushnet PROCESS COMPANY All items are made to order

Address correspondence to 760 Belleville Ave., New Bedford, Mass.

If you write maker identify as IEN - 13797

FRAME—Crystal Clear VINYL frame permits wide-angle side vision. Velvet Soft—Fits contour of all faces snugly. Inside edge of frame rolled for more comfort and better fit. Generous grid vents for full ventilation.

LENS—Optilite ® Lens meets Federal Spec. for optical qualities and impact resistance—available in Crystal Clear or Green. Lens quickly and easily replaced—locks securely in frame. Extra large lens area—fits over most styles of personal glasses.

WRITE FOR LITERATURE AND PRICES

UNITED STATES SAFETY SERVICE CO.
KANSAS CITY 6, MISSOURI BRANCHES IN PRINCIPAL INDUSTRIAL CITIES
In Canada PARMELEE, LTD. Toronto—Montreal

If you write maker identify as IEN - 13798

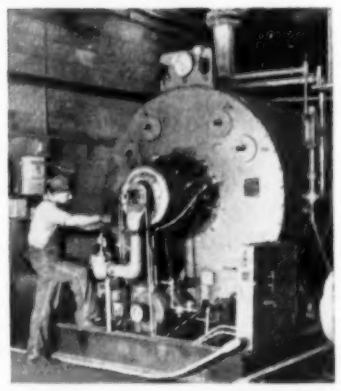
Cabot's *Plasgon* makes pipe joints tight . . . resists jars, shocks and vibration because it *stays* flexible. *Plasgon* is an easy-to-use plastic adhesive impervious to oil, water and steam, gasoline, glycol and kerosene . . . resists heat up to 350° F., and considerable pressure, yet can quickly be loosened with alcohol.

Try Plasgon today. Write for free sample tube of *Plasgon*. Available in black or white. State preference.

SAMUEL CABOT INC.
1233 Oliver Bldg., Boston 9, Mass.

If you write maker identify as IEN - 13799

9 REASONS WHY STEAM COSTS GO DOWN where *Powermasters* go in ....



COST-SAVING INSTALLATION—
complete factory assembled and fire-tested units delivered ready for operation as soon as connected to service lines; no foundation or costly stack needed.

FULLY AUTOMATIC CONTROL
provides maximum operating dependability and safety protection with minimum attention of operator.

3-PASS BOILER
produces most efficient flue gas velocity and heat transfer with maximum maintenance convenience.

INFINITELY VARIABLE COMBUSTION MODULATION
maintains most efficient firing at all loads. Instant response to load swings from 20 to 100% saves fuel, assures constant steam pressure and temperature.

STAGGERED TUBES
assure quicker heating, faster steaming and high quality dry steam; prolong tube life.

FORCED DRAFT
gives most accurate control of combustion and supply; saves equipment and maintenance costs.

83% GUARANTEED MINIMUM EFFICIENCY
saves fuel. At less than full load, Powermaster efficiency actually increases!

MAINTENANCE-SAVING ACCESSIBILITY
to water and fire sides simplifies tube cleaning and inspection.

VORIFLOW COMBUSTION
with air-atomizing oil burner or pre-mix gas burner keeps fuel costs down and boiler efficiency high at all loads. Combination burner allows quick change of fuel.

SEND FOR NEW BULLETIN 1219
Describes and illustrates all cost-saving features of Powermaster Packaged Automatic Boilers in sizes to 500 h.p. and pressures to 250 psi.

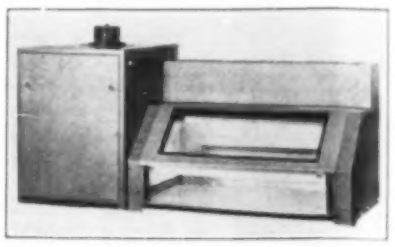
ORR & SEMBOWER, INC.
860 Morgantown Road, Reading, Penna.

BUILDERS OF COST-SAVING BOILERS SINCE 1885

If you write maker identify as IEN - 13801

FURNITURE . . Sterile work bench, air pressurized, free from dust, germs

Source: **BAKER COMPANY**
953 Baker Ave., Maplewood, Maine



For clean, precision work

An "island" of clean air is maintained in the enclosure provided by this new Sterilshield. Precision instruments can be assembled. Apparatus parts can be inspected and tested. Pharmaceutical, biological and precision operations can be carried out in an atmosphere free from airborne particles. The work area measures 40 by 24 inches. At the front is an opening measuring 32 by 6 in. to permit freedom of movement for an operator without restriction by arm holes, sleeves or gloves.

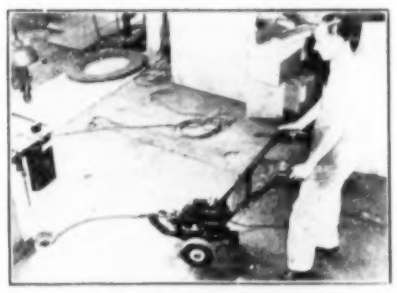
Air is drawn through an electronic cleaner which removes particles below 0.01 micron and the clean air is forced into the work space to fill it and present a pressure barrier against entrance of dust or germs through the operator's opening. Two 30-watt fluorescent lamps illuminate the interior. The operator views the work through a plate glass window set at an angle. Ultra violet lights can be specified as accessory equipment where exceptionally sterile conditions must be maintained.

One door folds down and slides under the stainless steel bottom of the work space when it is not in use. The other door lifts up to admit large work. When the doors are closed the work is protected by contact switches which automatically actuate the cleaner unit if either door is open.

If you write maker identify as IEN - 13802

CLEANING . . Pipe line machine to cut obstructions from a sewer line

Source: **OHIO TOOL & ENGINEERING CO.**
245 N. Spring St., Springfield, Ohio



No tendency to "helix"

An outer coil, wound right hand, and an inner coil, wound left hand, make up the section lengths of the flexible cable employed in this new sewer and drain cleaning machine. The two coils in a section are tied together at each end to make an integral unit. A new snap lock is employed so the cable can be made in short lengths and added as required. The open winding of the outer unit provides self-feeding action that brings foreign matter back from a stoppage area. Manual handling of the cable, while it is in operation, is eliminated.

When extreme torque is applied, the outer coil tends to increase in diameter while the inner coil tends to decrease. The two balance each other so the cable remains flexible and has no tendency to "helix".

Drive is by the company's Electric Eel mounted on a special dolly. The motor rates ¾ hp. Present users of the tool can purchase the dolly as a separate unit.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13803

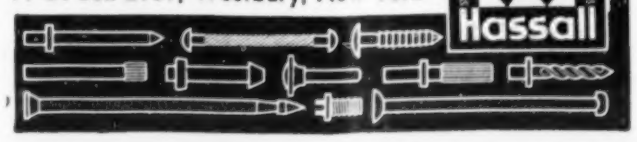
WRITE FOR FREE Hassall decimal-equivalent wall chart

In such popular demand (we've given away 50,000) — we've made it better. The new chart is far easier to read! In three colors to automatically signal decimal-equivalents of fractions. The special products which frame the chart are a constant reminder of a good source for cold-headed parts.

ESTABLISHED 1850

JOHN HASSALL, INC.
P. O. Box 2169, Westbury, New York

Hassall



If you write maker identify as IEN - 13804

Lazy Man's Easy-Out PLATE LIFTER SAVES CARS

Did our artist exaggerate about the ease with which you can remove anchor plates with Signode's ratchet tool? A little, maybe. But to hundreds of men who clean cars every day, it is the simplest, fastest tool made for the job! And, it does its work without splintering the wood! It will pay you just in time saved to supply Signode anchor plate removers to your own car cleaning crews! Ask your Signode salesman about this tool. Or, write for free illustrated folder. *Signode Steel Strapping Co., 2611 N. Western Ave., Chicago 47, Ill.*

SIGNODE ANCHOR PLATE REMOVING TOOL

TESTED AND SIGNODE APPROVED

THIS SEAL MEANS SIGNODE SECURITY IN SHIPPING

If you write maker identify as IEN - 13805

- ★ Fast delivery on cords of standard construction.
- ★ Complete engineering and manufacturing service on cords for special applications.
- ★ Integrated engineering-production control from rod mill to mold department.
- ★ Most comprehensive stock of dies and molds for electronic cords and assemblies in existence.
- ★ Quality proved by use on millions of products.

Write for details, explaining your application

WIRE SX PRODUCTS

CORDS LTD.
DIVISION OF ESSEX WIRE CORPORATION
121 DODGE STREET, DE KALB, ILLINOIS

If you write maker identify as IEN - 13806

HERE'S THE TAPE WITHOUT EQUAL!

USKORONA SPLICING COMPOUND

MONEY CAN'T BUY BETTER TAPE

Gives 100% protection on high-voltage jobs. Extremely moisture resistant. High tensile strength, elongation, and dielectric strength, low power factor. Fuses quickly without heat or pressure, makes perfect splices.

CHECK YOUR STOCKS. ORDER FROM YOUR DISTRIBUTOR!

Product of U.S. RUBBER SERVING THROUGH SCIENCE

UNITED STATES RUBBER COMPANY
MECHANICAL GOODS DIVISION • Rockefeller Center, New York 20, N. Y.

If you write maker identify as IEN - 13807

Boost air cylinder operation with Schrader Quick Exhaust Valves

Quick Exhaust Valve Schrader #3340

The completely automatic Schrader quick exhaust valve provides instant passage of exhaust air to the atmosphere.

Designed for mounting at cylinder ports, it speeds up piston action in either direction by dumping the air to the atmosphere, thus eliminating the usual slow-up caused by air traveling a distance to find its way to exhaust.

Complete catalog gives full information on the quick exhaust valve as well as hundreds of other products that will help you get the most out of air power in your plant. Send for it today.

A. SCHRADER'S SON

Division of Scovill Manufacturing Company, Incorporated

458 Vanderbilt Ave., Dept. D-37, Brooklyn 38, N. Y.

If you write maker identify as IEN - 13808

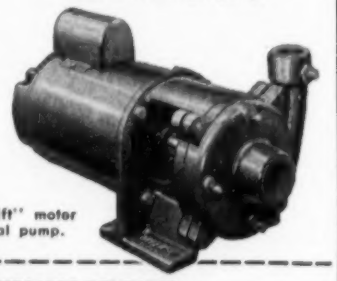
New Myers "Centri-Thrift" General Purpose Pump

An addition to present line of centrifugal pumps

Special low cost, centrifugal pump for bottle washers, booster service, air conditioners, boiler feed service, etc. Myers quality features: Removable, replaceable bronze wearing ring; separate stainless steel pump shaft extended through open bracket for quick inspection and accessability. Bronze impeller is locked to shaft.

Myers "Centri-Thrift" V-belt driven centrifugal pump.

Capacity to 50 gallons per minute. Heads up to 92 feet. Easily handles 180° water. Suction opening 1¼" pipe; discharge opening 1" pipe and can be rotated in any of four positions.



Myers "Centri-Thrift" motor mounted centrifugal pump.

MYERS

IMMEDIATE DELIVERY

Write for complete information and prices.

THE F. E. MYERS & BRO. CO.
316 Fourth St., Ashland, Ohio

If you write maker identify as IEN - 13809

Learn about Amazing New Office Space Stretcher

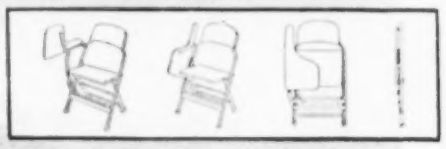
DOUBLE Seating and Table Space at a Moment's Notice

The new Clarin Tablet Arm Chair that Folds combines table and chair in one. You'll be amazed at how many people you can seat comfortably in a small office—and give each of them table space as well. Thus, you can hold those important group meetings in almost any office—and arrange for it in a few moments.

WRITE TODAY!

Our FREE illustrated Folder will give you full details and description of this wonderful, space-saving chair. Quality built—gives years of service—folds to flat 3-inch depth for fast, safe stacking in minimum space. An engineering gem—others are trying vainly to imitate it. Foam rubber cushioning if desired. Write for *free* folder today!

FOLDS FLAT IN 3 EASY STEPS



Clarin Mfg. Co.,
Dept. 30,
4640 Harrison St.,
Chicago 44, Ill.

There is a Clarin Steel Folding Chair for your every need. New FREE Catalog of complete line on request.

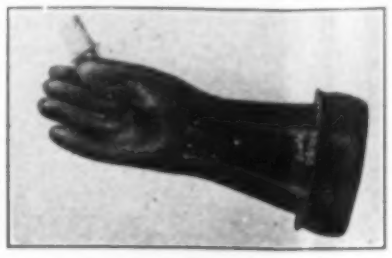
Clarin

ENGINEERED QUALITY MAKES THE BIG DIFFERENCE IN FOLDING CHAIRS

If you write maker identify as IEN - 13810

PROTECTING . . Neoprene glove finished to grip slippery objects

Source: SURETY RUBBER CO.
221 Hall Ave., Carrollton, Ohio



Not abrasive

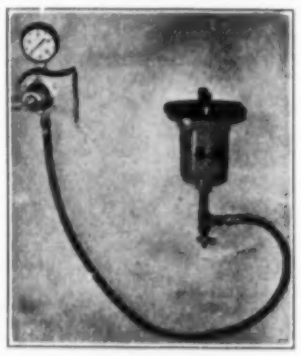
Illustrated is the new Turn-Cuff design in the company's neoprene glove line which also is available now in a Griptite slip proof finish. The cuff can be turned, as shown, to form a trough to catch liquids when a worker reaches up so they will not run down his arm or into the glove. The cuff also turns away from the finger tips to increase the gauntlet length by 2 inches.

The glove itself is non-allergic for workers who must operate in contact with oils, greases, gasoline, detergents, waxes, soaps, acids. The Griptite finish will not peel off in service. Light, medium and heavy weights are made in lengths from 10½ to 18 in. in the regular style. The Turn-Cuff design is in medium and heavy weights with lengths of 12 and 16 inches.

If you write maker identify as IEN - 13811

PRESS TOOLS . . Die cushion air operated with 2 to 7 in. piston

Source: DAYTON ROGERS MFG. CO.
2822-26 13th Ave. S., Minneapolis 7, Minn.

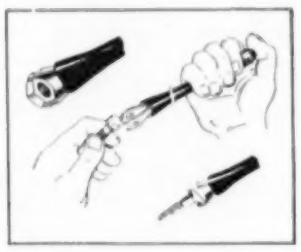


Installs easily

Model CR is a new self-contained pneumatic die cushion which the company is prepared to custom produce for specific die and punch press requirements. The cushion secures to the bolster plate on the press with one drilled and threaded hole. Or the central stud can be passed through the bolster plate hole and fastened directly to the die shoe. The cushion operates a hardened and ground pin pressure pad. It is supplied with a regulating valve and pressure gage.

If you write maker identify as IEN - 13812

Thumb pressure on a plunger head causes the jaws of this new Tip Wrench to move forward and open. Releasing the pressure permits the jaws to retract and grip a screw or bolt or nut. Teeth in the jaws engage a screw slot. The jaws themselves hold on the side of a bolt or nut. Three sizes range in capacity from No. 2 to No. 12 nuts or screws. List price is $1.35 from Smith Heat Treating Co., 5865 Wilmington Ave., Dept. IEN, Los Angeles 1, Calif.



All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13813

FOR PHENOMENAL SAVINGS IN PLANT LAYOUT

TEMPRINTS BLUE PLATE

FROM LAYOUT TO BLUEPRINT WITH NO DRAFTING

TemPrints are outline prints on transparent film, reproducing to exact scale the standard machines in your plant or made to engineering specifications of your particular equipment . . . TemPrints are also supplied for walls, partitions, windows, office furniture and shipping equipment.

TemPrint Grids are transparent sheets cross-lined to ¼" scale suitable for layout and floor plans.

When TemPrints are cutout and applied to the grids, the result is an accurate layout of your plant or office. Any number of duplicate prints accurately reproduced in the same size may then be made by processing through an Ozalid machine.

SIMPLY MAKE THE LAYOUT — AND THE LAYOUT WILL MAKE YOUR PRINTS

TEMPRINTS PUT THE PLAN INTO YOUR PLANT

MARINE SCALE INDUSTRIAL MODELS

Marine has specialized in scale models for many years. Marine Miniatures are accurate reproductions to scale of well-known plant machinery and equipment. All models are dimensionally accurate — may be identified instantly. A special catalog is available on request.

SEND FOR COMPLETE ILLUSTRATED CATALOG TODAY!

HARMAN ASSOCIATES

DEPT. H-3, HALESITE, L. I., N. Y.

If you write maker identify as IEN - 13814

New ROLLER CHAIN BREAKER

BREAK CHAIN IN SECONDS without damage to chain.

BREAKS ANY SIZE CHAIN No. 25 to No. 60.

BOSTON GEAR QUALITY THROUGHOUT Vital parts heat treated for wear-resistance and high strength.

AT YOUR BOSTON Gear DISTRIBUTOR Ask for new Chain Breaker folder. Explains simple operation.

Boston Gear Works, 63 Hayward St., Quincy 71, Mass.

BOSTON Gear

POWER TRANSMISSION PRODUCTS

If you write maker identify as IEN - 13815

ONLY TRI-LOK OPEN STEEL FLOORING *Gives you all these Service Features!*

★ ★ ★

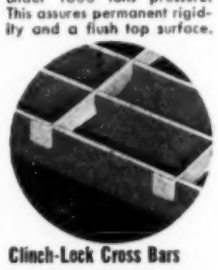
Can be fabricated from a variety of metals

FREE CATALOG

Write today for Bulletin QK-1102-4

Locked-in Strength

Cross bars are locked in place under 1600 tons pressure. This assures permanent rigidity and a flush top surface.



Clinch-Lock Cross Bars

Bent-over bars lock assemblies into permanent integrated panels.

Self Cleaning

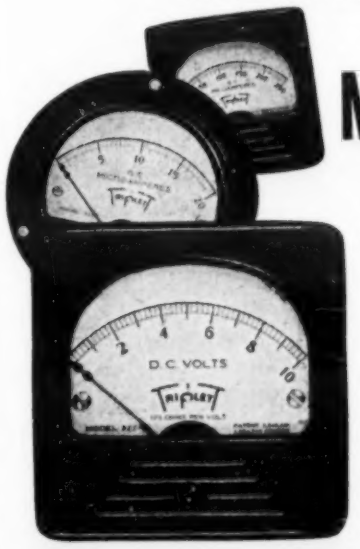
Better than 80% open area assures self cleaning.

DRAVO CORPORATION

National Distributor for THE TRI-LOK COMPANY

Dravo Building, Fifth and Liberty Aves., Pittsburgh 22, Pa.

If you write maker identify as IEN - 13816



MODERNIZE WITH TRIPLETT METERS

A SIZE, TYPE, AND STYLE FOR EVERY INSTALLATION

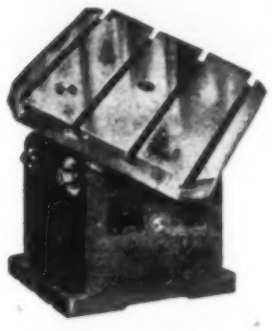
Your instrumentation is strictly modern in design and construction with Triplett Meters. You can have sizes 2" to 7" in a wide variety of case shapes and mounting arrangements, A.C., D.C., R.F., Rectifier or Dynamometer. Molded and metal cases, rear illumination, and other special features are available. For precision and economy virtually every meter part is made in Triplett plants under rigid humidity and dust control. Every meter represents the refinements gained in half a century of meter experience. Keep *your* panels up-to-the-minute with Triplett Meters—famous the world over for quality, accuracy, and dependability.

Triplett Electrical Instrument Co.
Bluffton, Ohio, U.S.A.

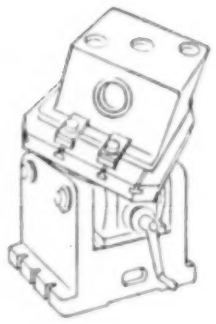
TRIPLETT

If you write maker identify as IEN - 13817

universal tables



save up to 50% of set up time on radials and boring mills



With one set up on Cincinnati Gilbert universal tables, you can drill at any angle up to 90° on five sides of a cube. Special feature: four-point support of the work in the lowered position takes strain off the worm, provides greatest possible rigidity of the work, best insurance of accuracy. Table sizes: 22" and 27" square. Height: 22". Four ¾" tee slots. Write for Bulletin 850.

THE CINCINNATI GILBERT MACHINE TOOL COMPANY
3366 BEEKMAN ST. • CINCINNATI 23, OHIO

RADIALS
BORING MILLS
ACCESSORIES

If you write maker identify as IEN - 13818

FOR SAFETY Interlock!

PROTECT MEN AND EQUIPMENT AGAINST "MENTAL LAPSE".

Operator is shown entering compartment which is interlocked with protective equipment. Diagram shows key interchange scheme.

KIRK KEY INTERLOCK *System*

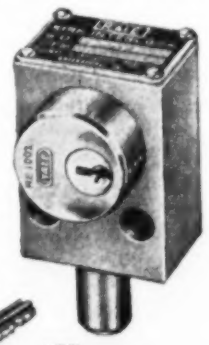
Provides a predetermined sequence of operation...and prevents "mental lapse" which might cause damage to men and equipment.

A Typical application is shown above. "A" is interlocked with "B" to prevent opening of door "A" when switch (locked by "B") is closed and in service. Only when protective switch (with "B" interlock) is opened, and locked open with a Kirk Key can the same key be released to unlock "A" (on door).

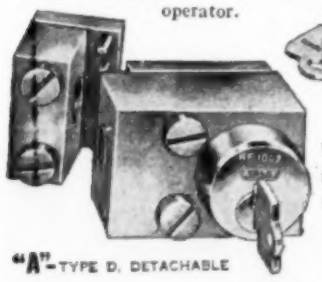
This makes sure that circuits in compartment with "A" interlock are dead and safe to approach. The main switch locked by "B" cannot be reclosed until "A" is locked closed, making the same key available to unlock "B", and thus allow the switch to be closed in again.

The key can now be removed from "B", indicating that the circuits are energized.

When removed, the key is usually kept on a rack and used only by an authorized operator.



"B"-TYPE F FLAT MOUNTING



"A"-TYPE D. DETACHABLE

Unlimited interlocking schemes may be arranged from many types of Kirk Key Interlocks

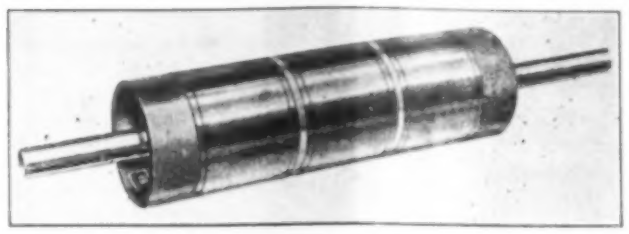
Write for Bulletin 1700 for many more details.

R&IE EQUIPMENT DIVISION
I-T-E CIRCUIT BREAKER CO.
GREENSBURG, PA.

If you write maker identify as IEN - 13820

SEPARATOR . . Magnetic pulley, permanent design, for conveyor

Source: ERIEZ MFG. CO.
253 Grove Drive, Erie, Pa.



Also will feed sheet steel

New pulley measures 4 in. in diameter and is mounted on a 1-in. stainless steel non-magnetic shaft, ready for installation as the head pulley in a belt conveyor. It is suited for use with belts measuring ⅛ in. or less in thickness and for speeds to 30 rpm. or less. Nine widths apply with belts measuring 4 to 24 inches. Standard construction is flat face but the pulley can be crowned by adding a strip of aluminum around the center.

If you write maker identify as IEN - 13821

SLIP PROOFING . . Abrasive paint for floors, loading docks, treads

Source: COLONIAL REFINING & CHEMICAL CO.
953 N. B. C. Bldg., Cleveland 14, Ohio

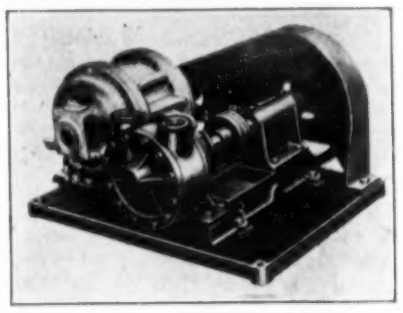
Free sample upon request

Sure-Grip is a new abrasive filled plastic base paint for brush application to produce a surface with good traction and slip proof characteristics. A single coat is about ten times the thickness of a conventional coat of paint. The film dries in about 10 hours. It resists attack by gasoline, oil, alcohol, water. It can be applied on wood, metal or concrete and is available in red or gray.

If you write maker identify as IEN - 13822

PUMP . . Motor driven rotary handles heavy fuel oil smoothly

Source: ECLIPSE FUEL ENGINEERING CO.
1002 Buchanan St., Rockford, Ill.



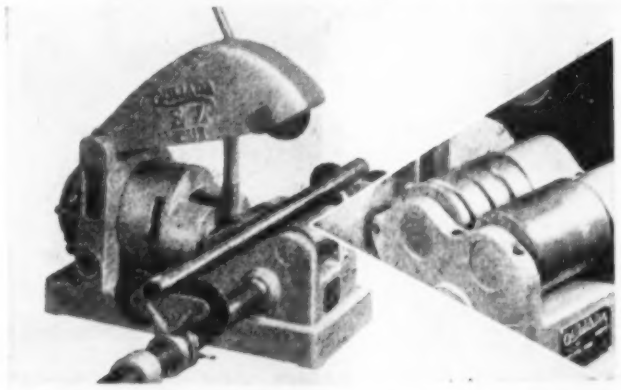
Pulsation free

The gear and crescent mechanism in this new pump operates equally well at 400 rpm. in either direction. It is mounted on a base with V-belt connection to the driving motor to handle heavy fuel oil without cavitation, pounding or or churning at operating pressure to 100 pounds. It has been designed primarily to operate with the company's Type-CF gas-oil burner. A flexible coupling on the pump shaft permits axial movement of the driving sheave without putting an axial load on the pump.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13823

Thousands of Cuts Per Sharpening with Portable Quijada E-Z Cutter



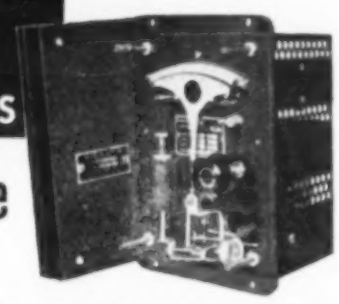
You'll find the Quijada E-Z Cutter the handiest pipe, tube and conduit cutter you've ever used. Weighs only 100 lbs. yet handles all cutting requirements in pipe from ⅜" to 2" (up to 3" in tubing and conduit). You get more cuts per sharpening of cutter wheel because Quijada's patented power driven rollers revolve pipe or conduit for constant cutting...no slipping. Comes with convenient foot switch. Built to last a life-time.

Unconditionally guaranteed by

QUIJADA TOOL DIVISION OF GAINES-COLLINS
5474 Alhambra Ave., Los Angeles 32, Calif.
Manufacturers of Automatic Threaders and Cutters for more than a Quarter Century
• Write today for new catalog IEN-12

If you write maker identify as IEN - 13824

Rocking Contact V-00 & 221 VOLTAGE REGULATORS



Fast...Accurate Response ON SMALL GENERATORS

Rocking Contact voltage regulators are available in two types for use on small ac generators with direct-connected exciters — TYPE V-00 for generators to 157 kva maximum at 3600 rpm; TYPE 221 for generators to 438 kva maximum at 3600 rpm.

Rocking Contact voltage regulators operate directly in the exciter field circuit to give fast response to voltage changes. No sluggish, time-wasting relays. No vibrating or sliding contacts to wear out. A small movement of the *Rocking Contact* sector over a curved commutator covers the entire regulating range

Write for Bulletin 14B6143A, Allis-Chalmers, Milwaukee 1, Wis.
A-4048

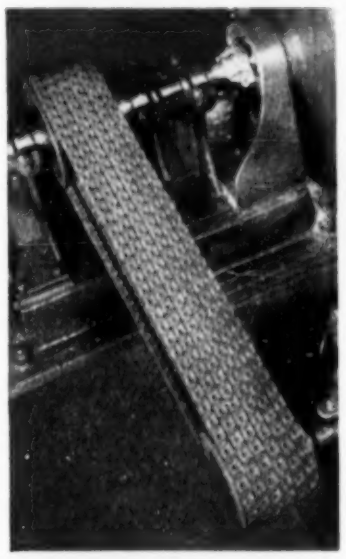
Rocking Contact is an Allis-Chalmers trademark.

Movement of a fraction of an inch changes the field resistance from "all out" to "all in" position in very fine steps.

ALLIS-CHALMERS

If you write maker identify as IEN - 13825

Test these 3 "E's" of Veelos in your plant



Ease of Installation—the link construction of Veelos makes it easy to install without re-setting the motor or tearing down outboard bearings. Installation time is often cut 50% to 90% over endless v-belts.

Efficiency of Operation—because individual Veelos v-belts can be adjusted for correct tension, matched sets can be kept matched; vibrationless, full power delivery is assured.

Economy of Inventory—just 4 reels of Veelos in the 0, A, B and C widths can replace up to 316 different sizes of endless v-belts. Inventory is simplified, costly belt deterioration is eliminated and you save valuable stock-room storage space.

VEELOS DATA BOOK
Here's the complete story on Veelos, the adjustable v-belt. Write for your copy today!

VEELOS THE LINK V-BELT

MANHEIM MANUFACTURING AND BELTING CO.
651 Manheim Street, Manheim, Pa.

Adjustable to Any Length • Adaptable to Any Drive

If you write maker identify as IEN - 13826

NEWCOMB-DETROIT

PIONEERS IN ENGINEERING, MANUFACTURING & INSTALLING OF

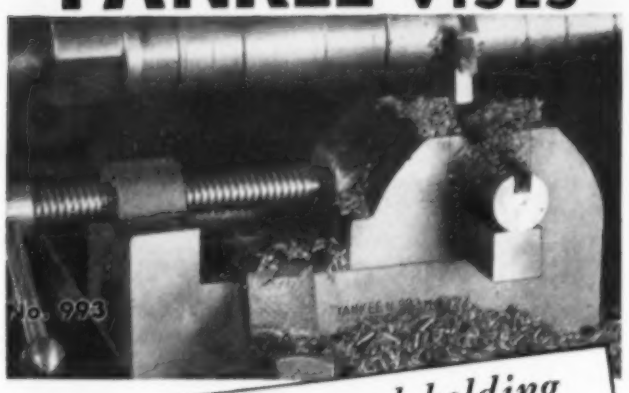
INDUSTRIAL OVENS
•
SPRAY BOOTHS
•
PARTS WASHERS
•
DUST COLLECTORS
•
HEAT and AIR SYSTEMS

ESTABLISHED 1912
• DETROIT DIVISION
• GRAND RAPIDS DIVISION
• NEWCOMB INDUSTRIES, LTD., WINDSOR DIVISION

For Bulletins and Quotations, Wire, Write or Call—
NEWCOMB-DETROIT
5757 Russell St., Detroit 11, Mich.
TR 3-2100

If you write maker identify as IEN - 13827

"YANKEE" VISES



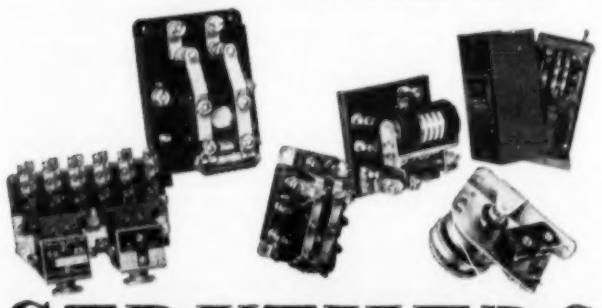
for accurate, work holding
START-TO-FINISH

Every operation is lined up square and true in a "Yankee" Vise. Carefully machined . . . top, bottom, sides and front end to give accurate alignment in any position. Easily made into jig. V-grooved hardened steel block furnished with each "Yankee" Vise. Four sizes . . . 1½", 2", 2¾" and 4" jaw widths. Write for "Yankee" Tool Book.

YANKEE TOOLS NOW PART OF
STANLEY
THE TOOL BOX OF THE WORLD

NORTH BROS. MFG. CO.
Philadelphia 33, Pa.

If you write maker identify as IEN - 13828



STRUTHERS -DUNN

Standard relays and timers match 4 out of 5 requirements

5,348 RELAY TYPES

STRUTHERS-DUNN, INC., 150 N. 13th St., Phila. 7, Pa.

BALTIMORE • BOSTON • BUFFALO • CHARLOTTE • CHICAGO • CINCINNATI
CLEVELAND • DALLAS • DETROIT • KANSAS CITY • LOS ANGELES
MINNEAPOLIS • MONTREAL • NEW ORLEANS • NEW YORK • PITTSBURGH
ST. LOUIS • SAN FRANCISCO • SEATTLE • SYRACUSE • TORONTO

If you write maker identify as IEN - 13829

IMPORTANT NOTICE

The Genuine MAUSER
VERNIER CALIPER

IS NOW MADE OF
STAINLESS STEEL
THROUGHOUT

The fine finish will not tarnish or deteriorate in many years of use.

NEW #101

$14.75 POSTPAID

. . . AND THE FOLLOWING IMPROVEMENTS HAVE BEEN ADDED

★ A SPECIALLY LONG VERNIER to read the thousandths
★ A HARDENED PHOSPHOR-BRONZE adjustable gib retains accuracy
★ 3 EASY READING SCALES • 1/1000" • 1/128" • 1/10 mm. in back

Request Illustrated Folder showing complete line of MAUSER Toolmakers Calipers, Height gages, Bevel Protractors and Tool Stands.

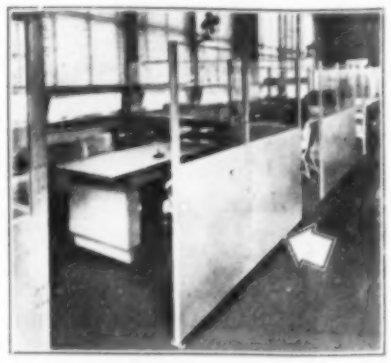
Dealers: Here's a real profitable line!

GEORGE SCHERR CO., INC.
COMPLETE LINE OF PRECISION INSTRUMENTS
200-EN LAFAYETTE ST. • N.Y. 12, N.Y.

If you write maker identify as IEN - 13830

FURNITURE . . Steel partition, free standing design for office use

Source: GLOBE-WERNICKE COMPANY
Carthage & Ross, Cincinnati 12, Ohio



Catalog T-352

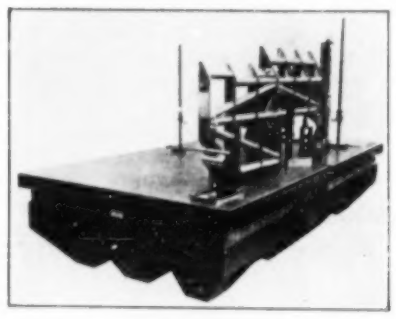
Work areas equipped with the company's steel Techniplan demountable office equipment, previously described IEN-12734-52, can be closed in by this new window equipped free standing steel partition. A metal angle fits inside the partition post and is equipped with a broad base which rests on the floor and can be fastened to it. A clamp is included to grip and hold each adjoining partition panel in correct position. Floor connectors are slotted to provide for adjustment on uneven surfaces.

Two heights are 48 and 66 inches. The former is available with steel or glass panels. The latter can be specified with steel, glass or acoustical panels.

If you write maker identify as IEN - 13831

LAYOUT . . Granite surface plates in multiple assembly on cast iron base

Source: ELKRO COMPANY
734-38 Albany St., Dayton 8, Ohio



Built to order

New support base with provision for individual plate alignment has been developed by the company to mount two or more of its granite surface plates side by side. The base is fitted with legs to mount solidly on a floor. Screw adjustments provide three-point support for each plate. A 15-deg. rotation of any one of the screws moves its support point up or down 0.001 inch. The illustration shows two of the largest available single plates, measuring 6 by 10 feet each, on one of the bases.

If you write maker identify as IEN - 13832

Ferr-O-Niel trade names a new composite pickling solution, based on phosphoric acid, which is suited for pickling hot rolled steel, stainless steel, gray iron castings, finished machine parts. The solution is free from corrosive and harmful fumes. The waste materials accumulate as iron phosphates and settle to the bottom of the processing tank. They can be removed readily. The sludge is not harmful and presents no disposal problem. Nielco Laboratories, P.O. Box 4703-A, Detroit 19, Mich., developed the solution.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13833

PORTABLE STRAPPING KIT

Brainard's new UTILIKIT is lightweight, portable and complete—contains all the equipment you need for steel-strapping cartons, bundles, packages, etc. Equipped with a 300-foot coil of strapping in cardboard dispenser, 1000 strapping seals and three basic tools: stretcher, sealer and snips. All materials packed in steel carrying case; economically priced. Can be used by anyone after a few minutes instruction.

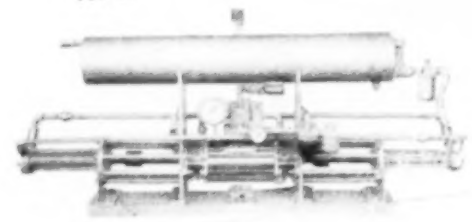
Brainard
STEEL DIVISION
SHARON STEEL CORPORATION

For booklet on UTILIKIT write
BRAINARD STEEL DIVISION
Griswold Street, Dept. 11-12
Warren, Ohio

If you write maker identify as IEN - 13834

MEMO: *To Engineers— use Ledeen Pumps for—*

1 Operating high pressure cylinders, clamps, valve actuators and hydraulic presses.
2 Safety and high pressure testing installations.
3 Developing high hydraulic pressures from low pneumatic pressures.
4 Long pressure-holding cycles without overheating or churning the hydraulic fluid.



Ledeen Pumps are designed especially for heavy duty industrial work . . . are self starting . . . are built in a wide variety of pressure ratios and volume displacements . . . have but few moving parts . . . use simple adjustments and controls . . . and require a minimum of maintenance. They come as package units ready to install and cost but little to operate.

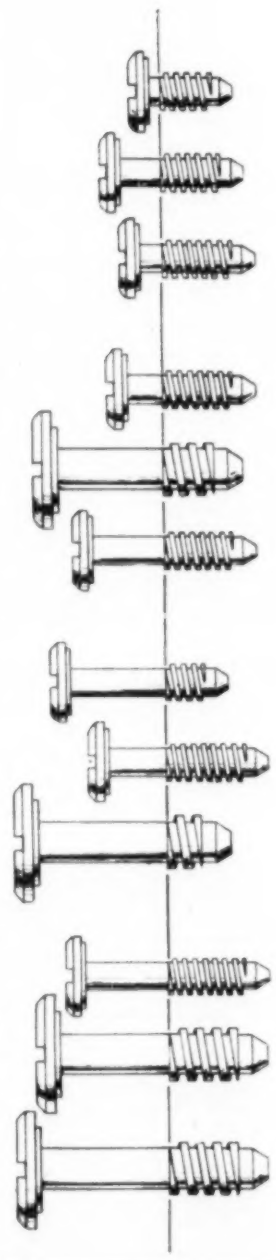
Write for bulletin 4000

VALVES • CYLINDERS
VALVE ACTUATORS
AIR-HYDRAULIC
PUMPS & BOOSTERS

Ledeen Mfg. Co.
1602 San Pedro St.
Los Angeles 15, Cal.

If you write maker identify as IEN - 13835

Meet 90% of your Requirements With ONE Size SOUTHCO Screw Fastener



Now it is no longer necessary to call out another size fastener everytime thickness varies by a few thousandths. One size SOUTHCO Screw Fastener can be specified having a grip range so wide that it covers 90% of all variations.

Grip lengths vary from 1/10 to 1 inch, but more important, a wide variety of neck and screw lengths within any grip length are available. Two different diameters can be specified, depending upon the size and kind of installation.

By selecting the one size SOUTHCO Screw Fastener that meets your requirements, you can eliminate the high costs of stocking, handling and installing many different sizes.

All the advantages of SOUTHCO Screw Fasteners can be obtained by writing to Southco Division, South Chester Corporation, 1407 Finance Building, Philadelphia 2, Pa.

THREE HEAD STYLES
Knurled Wing Slotted

©1953

SOUTHCO
FASTENERS

PAWL, SCREW AND SPRING • DRIVE RIVETS
ANCHOR NUTS • ENGINEERED SPECIALTIES
OFFICES IN PRINCIPAL CITIES

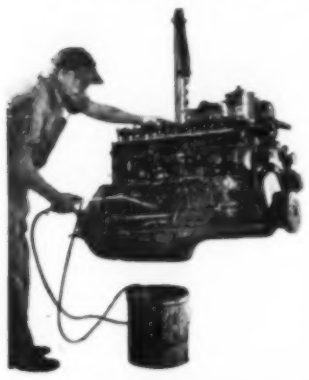
WHEREVER TWO OR MORE PARTS ARE FASTENED TOGETHER, STANDARD AND SPECIAL DESIGNS FOR IMPROVED PERFORMANCE AND LOWER PRODUCTION COSTS

If you write maker identify as IEN - 13837

TOPS FOR Metal Cleaning

BRULINSOLV

a concentrated solvent emulsion cleaner



BRULINSOLV is a fast acting, liquid concentrate, which when mixed with low cost solvents steps up cleaning action of the solvent. Its action is much the same as detergent in water. This permits easy flushing of surface with water.

It is safe to use—is non-toxic and non-corrosive, the odor is pleasant. It is free of chlorinated or phenolic compounds.

Used extensively for cleaning machinery and equipment, office machines and typewriters, aircraft surfaces, painted or unpainted concrete floors and is so safe it may be used in cleaning grease, tar and oil from hands.

BRULINSOLV

Write today for more complete information.

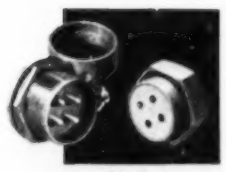
BRULIN & COMPANY, INC.
2938 COLUMBIA AVENUE · INDIANAPOLIS 7, INDIANA

If you write maker identify as IEN - 13838

The HHB Engineering Representative..

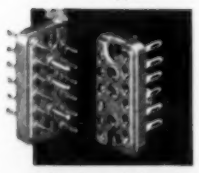
IS READY TO SERVE YOU . . ANYWHERE IN THE U.S.A.

offering **ELECTRONIC COMPONENTS AND PARTS . . MADE BY THE WELL-KNOWN HHB CRAFTSMEN**

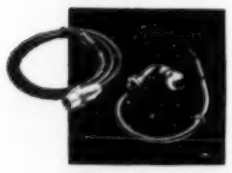


AN Types

RF Types



Rack and Panel



Cable Assemblies

Now! . . . experienced HHB Engineering Representatives will call to serve you . . . where, and when, you are in need of a reliable source for electronic components, and parts. They offer the complete facilities of HHB including research, design, engineering, as well as manufacturing of quality products.

The HHB staff is eager to work with engineering departments on standard requirements, and special components parts problems. Over the years HHB has consistently surpassed the rigid specifications of America's leading users of connectors, cable assemblies, and many types of miscellaneous electronic parts.

Wherever you are . . . we invite your inquiries.

H. H. BUGGIE Inc.
TOLEDO 4, OHIO

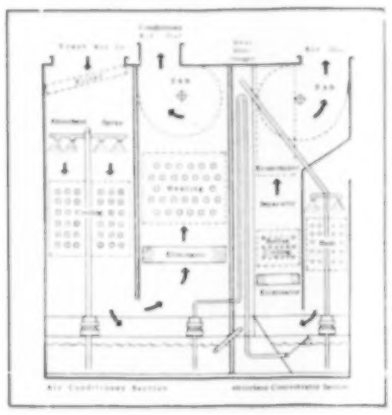
Skilled in Electronic Component Parts RESEARCH • DESIGN ENGINEERING MANUFACTURING

Sales Engineers in All Principal Cities

If you write maker identify as IEN - 13840

AIR CONDITIONING . . Hygrol dryer with heater, cooler and regenerator

Source: NIAGARA BLOWER CO.
3117 Chrysler Bldg., New York 17, N. Y.



Built for specified use

Series 5700 is a new combination assembly of air conditioner employing the company's Hygrol moisture absorbing liquid with cooling and heating coils and a regenerator to recondition the Hygrol. The new model is available in capacities from 1,000 to 5,300 cfm. with equal capacity provided in somewhat less than one-half the space required by the previous two-unit design.

Fresh air passes through a filter into a spray chamber where it is brought into contact with the Hygrol moisture absorbing liquid. The dry air then moves through a cooling coil, turns back upward through an eliminator that removes any entrained Hygrol mist and through a heating coil to the conditioned air outlet fan. Either the cooling or the heating can be made active to produce a desired output temperature in the dry air.

In the same housing is a separate air intake with spray heads to handle the Hygro liquid. Heating and cooling coils and a moisture eliminator take out the water that the liquid has picked up and return the liquid to the conditioner side for recirculation through the equipment.

If you write maker identify as IEN - 13841

PLASTIC . . Laminating resins to build fixtures, jigs, models, molds

Source: REZOLIN INC.
5734-38 W. 96th St., Los Angeles 45, Calif.

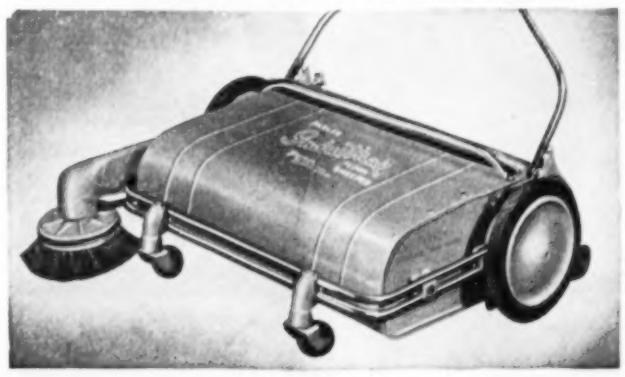
Pilot kit $15

Toolplastik L-900 and Toolplastik Gelkote L-910 are two new non-shrinking laminating plastics. They apply with glass cloth reinforcing to build jigs, fixtures, tools. Type L-900 is for standard laminating use. Type L-910 is employed to form surface layers and is backed up by the reinforcing glass fabric and with Type L-900 to required thicknesses.

Both are supplied with hardeners to be added just prior to application. They are packaged so the hardener for each can be identified readily and poured into the original resin container for mixing on the job. The company has prepared a pilot kit containing the materials necessary for the construction of a laminated tool, including mold preparation agents and reinforcing glass cloth.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13842



Pay Dirt

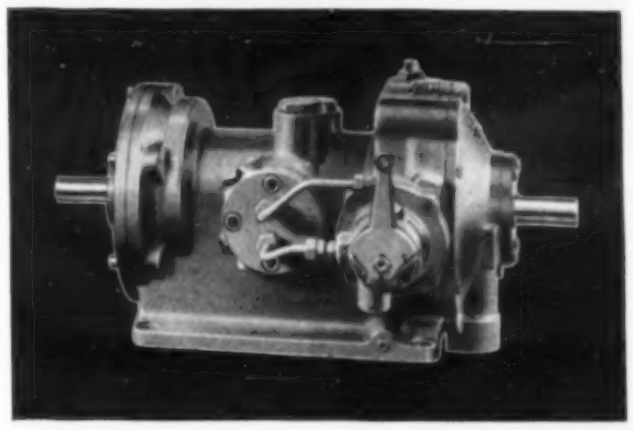
Sweep your floors the Parker Sweeper way and floor dirt becomes pay dirt. A Parker Sweeper is 400% faster than inefficient pushbrooms. It reduces "taken-for-granted" sweeping expenses by surprising amounts. Sweeps and collects in one operation. Easily pushed . . . easily emptied. Ideal for all businesses from small garage to large factory.

Full details in big descriptive bulletin. Write PARKER SWEEPER COMPANY, 412 BETCHTLE AVE., SPRINGFIELD, OHIO

PARKER FLOOR SWEEPERS

Manual and Motorized Models

If you write maker identify as IEN - 13843



ANY-SPEED OILGEAR FLUID POWER TRANSMISSION Solves drive problems —Improves machine performance

Even machines that lead their fields have benefited greatly by a change to the *ANY-SPEED* Oilgear Fluid Power Transmission . . . simply because top machine performance often depends on a speed flexibility other drives just don't have. The *Any-Speed* Oilgear is *just that*—from zero to 1600 r.p.m. And once you pick your best speed it stays there . . . or until you want to change. Smooth shading of speed all the way up or down. Full control manually, hydro-electrically, pushbutton or automatic remote. Small, durable, dependable, this "power package" installs easily, ends drive trouble, saves power, cuts maintenance to a sliver. Simple, accessible design. Drives off any constant speed source. Write for descriptive Bulletin 67110A. THE OILGEAR COMPANY, 1567 West Pierce St., Milwaukee 4, Wis

If you write maker identify as IEN - 13844

NEW WAY TO LOWER SLING COSTS

Let us send you this new bulletin on ROEBLING ALL-PURPOSE SLINGS with the Tapered Sleeve Splice

YOU SAVE every way with these slings: 1) they cost less, are ready for the job; 2) they're flexible, easy to handle, tough, long lasting, develop the full catalog strength of the rope. And now you can get All-Purpose Slings with a heavy steel galvanized thimble, plus attached weldless hooks, links or shackles, if desired. They're available with loops in standard lengths and sizes; stocked by Roebling distributors and branches...Order All-Purpose Slings with the Tapered Sleeve Splice for lower sling costs; and send for new descriptive bulletin. John A. Roebling's Sons Corporation, Trenton 2, N. J.

Subsidiary of The Colorado Fuel and Iron Corporation

ROEBLING

If you write maker identify as IEN - 13845

LIFTS UP TO 25 TONS

Behind the 25-ton lift capacity of this Koehring 304 Truck Crane are many important features that give you big-tonnage output. On the intermittent usage of clamshell or crane work, there's no time-out for adjusting clutches. Heat-compensator spring automatically makes all tension changes, maintains full clutch efficiency at all times. Koehring booster clutch cuts normal lever pull 50%, retains accurate "feel" of load. Also checks max. 110-ft. boom length with jib, power boom lowering, 35 mph mobility. Other sizes: up to 79½ tons lift capacity.

KOEHRING COMPANY
Milwaukee 16, Wis.

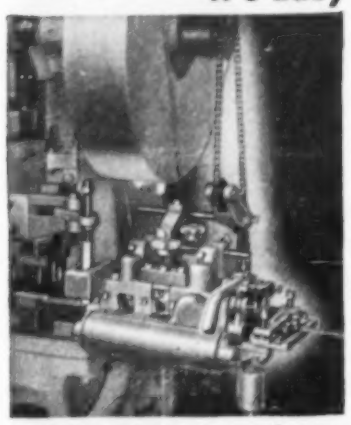
Write for bulletin

KOEHRING *Truck Cranes*

If you write maker identify as IEN - 13846

Get RAPID-FIRE PRODUCTION from your PUNCH PRESSES

It's Easy with WITTEK Automatic Roll Feeds



Wittek automatic roll feeds fit all makes and sizes of punch presses — provide maximum efficiency and extreme accuracy in the high speed automatic feeding of strip stock. Made in single roll, double roll, and compound types with straighteners, in models to feed (push or pull) in any direction. Length of feed is easily adjusted to meet individual requirements.

4472

WITTEK Reel Stands

Simplify Handling of Coiled Stock

Choice of standard models to facilitate handling coiled stock . . . from small, light coils to those weighing up to 800 pounds. Larger reel stands automatically center the coils — provide frictional braking action to prevent overrunning, maintain uniform coil slack.

Write for full particulars

WITTEK Manufacturing Co.

4336 W. 24th Place, Chicago 23, Illinois

Automatic ROLL FEEDS AND REEL STANDS

If you write maker identify as IEN - 13847

AUTOMATIC PROTECTION OR CONTROL for your heating process

. . . WITH ALNOR PYROTAC

Here's a simple, low-cost way to obtain *AUTOMATIC PROTECTION* against damage due to excessive temperatures . . . safeguard your investment in heating equipment and materials in process. This precision-built instrument constantly indicates temperature of the heated equipment and sounds an alarm and/or shuts down the heated circuit at a safe, pre-set temperature. It may also be used as a *CONTROLLER* on a process requiring shutdown upon reaching a final process temperature—such as ceramic kilns, molds, etc. Automatic thermocouple break protection assures safety if couple or extension wires should break.

Ask your Alnor representative for details on this sturdy, precise instrument. You'll find the price of less than a hundred dollars unusual for an instrument of this type. Write for bulletin that contains complete description and wiring diagrams of actual applications. Illinois Testing Laboratories, Inc., Room 517, 420 N. LaSalle Street, Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN - 13848

Get the Facts! about WATER HAMMER and how you can ELIMINATE THIS COSTLY NUISANCE with

WILLIAMS-HAGER FLANGED *Silent* CHECK VALVES

Yes—you can put an end to costly, dangerous water hammer in your piping system—NOW—with Williams-Hager Flanged Silent Check Valves. Compact and durable, they can be installed without special tools—in any position. Built for years of silent service, they are available in standard pipe sizes from 1" to 20". Investigate today!

WRITE FOR BULLETIN WH-851

This bulletin contains all the facts about water hammer—its cause, effect and control. Write for your copy!

CHECK VALVES

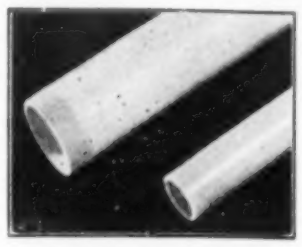
THE WILLIAMS GAUGE CO., INC.

2900 Pennsylvania Avenue, Pittsburgh 33, Pa.

If you write maker identify as IEN - 13849

PIPE . . Rigid extruded plastic for lines handling chemical fluids

Source: CARLON PRODUCTS CORP.
10225 Meech Ave., Cleveland 5, Ohio



Schedules 40 and 80

Type V is a new rigid non-plasticized polyvinyl chloride plastic pipe which the company has added to its line in a range of nominal sizes from ½ to 6 inches. It is particularly suited to handle electroplating solutions. Test installations indicate its ability to handle hydrochloric, nitric, sulfuric acids, gases, corrosive chemicals and vapors. Installation can be made above or below ground. The pipe has high dielectric strength, low water absorption and is non-flammable. It is immune to rot and electrolytic corrosion.

Weight, per 100 ft., ranges from about 19 to 504 lb. over the size range. Maximum working pressure is 500 lb. for the ½-in. size, 195 lb. for the 6-in. pipe. Two varieties are for medium impact with high chemical resistance and for high impact with some decrease in chemical resistance. Lengths are assembled by conventional means. The pipe can be cut and threaded.

If you write maker identify as IEN - 13850

FURNITURE . . Steel drawers apply under steel or wood bench tops

Source: INDUSTRIAL BENCH & EQUIPMENT CO.
98 South St., New Britain, Conn.

Ready to install

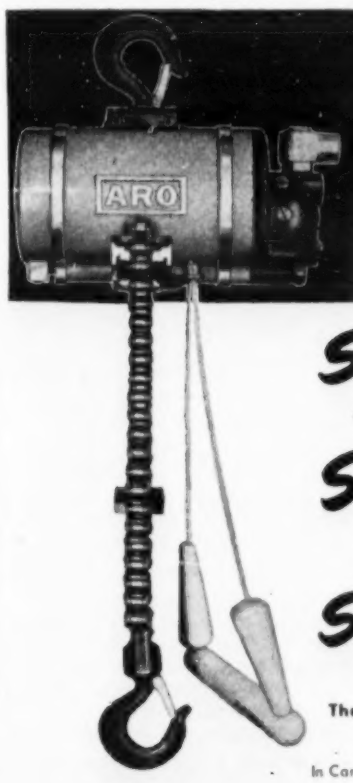
Four sizes, ranging from 18 by 16 by 5 in. to 20 by 20 by 6 in., are available in single, double and triple assemblies to install under work benches and stands. Joints are welded. Slideways are integral with the top for smooth free movement. Handles are designed for a comfortable grip. Closed and open top drawers are available. Runners and screws are inside the drawer for theft proof assembly when each drawer is locked. Cylinder locks, padlock attachments and trays can be specified to use with the drawers.

If you write maker identify as IEN - 13851

Horsehair bristles are mounted in a galvanized wire handle and are held in flat position by a steel ferrule in a new brush designed to spread hot or cold glue on a work surface. The brush spreads the glue evenly and conserves its use. Packaging is two dozen per box at $3 per dozen. Biltwell Brush Co., 225 S. Church St., Dept. IEN, Rockford, Ill., is the manufacturer.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13852



ARO 1000 pound AIR HOIST

SPEED... Lift rate . . . over 40 ft. per minute!

SIZE... Overall length 10¼" weighs only 28½ lbs.

SAFETY... Betters all safety requirements!

Write for full details.
The Aro Equipment Corporation
Bryan, Ohio
Offices in All Principal Cities
In Canada—Aro Equipment of Canada, Ltd. Toronto, Ont.

ARO AIR HOIST

Also . . . Air Tools . . . Lubricating Equipment . . . Aircraft Products . . . Grease Fittings

If you write maker identify as IEN - 13853

SHEEHAN METAL MESH BELT CONVEYORS for FORGING and STAMPING PRESSES

Features:

PRESS CONVEYORS:
• No belt slippage due to heat expansion • Oils . . . greases are beneficial, not harmful to operation

FORGING CONVEYORS:
• Hot forgings do not affect belt movement • 6½ inch under-press clearance—no cumbersome chutes necessary

SHEEHAN Conveyors easily convert to scrap handling • Sheet Metal Scrap • Flashings • Turnings

YOUR PROBLEMS! — May we analyze your conveyor problems? Complete engineering "Know How" available. Sheehan Conveyor users have saved thousands of dollars in floor space, material handling and manpower. There's a SHEEHAN Conveyor for most industrial use.

R. T. SHEEHAN CO.
8071 N. Territorial Rd. • Plymouth, Michigan

If you write maker identify as IEN - 13854

New LEIGH LG-3 *High Speed* GRINDER

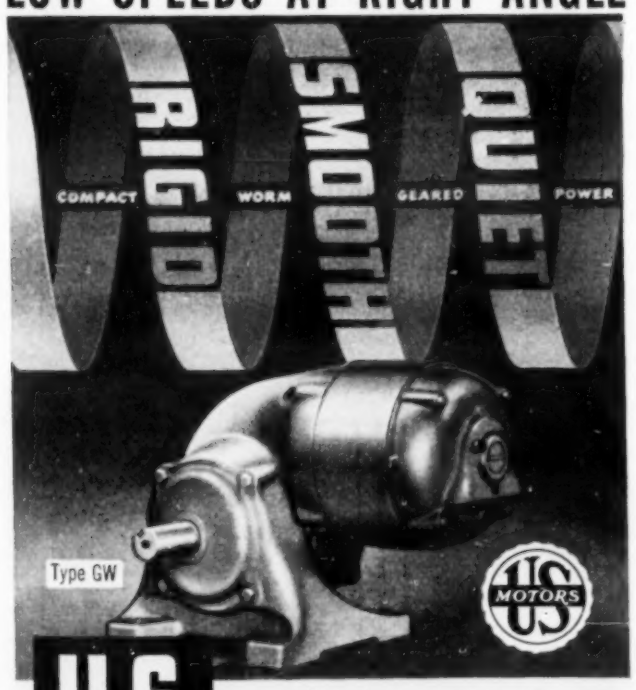
20,000 R.P.M. Ball Bearing AC-DC Motor—enough speed to operate rotary cutters, mounted points and abrasive rolls efficiently, with rheostat speed control for buffs, free abrasives etc. Ample power for wheels to 1¼" dia. A special (patented) *long life, extremely flexible,* shaft that follows your slightest move without fighting back. Full ball-bearing spindle that gives real finger tip control. Takes tools with ¼" shanks and has insert collets for smaller arbor sizes. Advanced engineering, quality construction, and a wide choice of mountings, hangers, pedestals, rheostats, switches and accessories. This new type grinder is outperforming and out-lasting much heavier, more costly and more cumbersome machines.

Write for Bulletin 12-A

SPRING SPECIALTY CO. 25 NORTH 5TH AVE. MAYWOOD, ILL.

If you write maker identify as IEN - 13855

LOW SPEEDS AT RIGHT ANGLE



U.S. SYNCROGEAR MOTOR

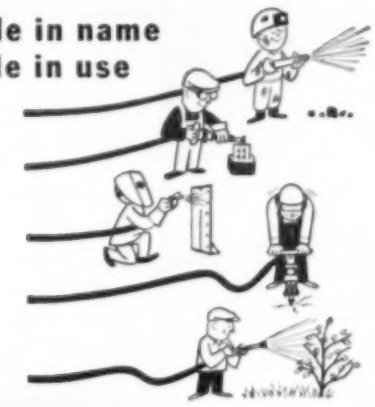
20 to 155 RPM – ¼ to 3 HP *Request Bulletin*

U.S. ELECTRICAL MOTORS Inc.

BOX 2058, LOS ANGELES 54, CALIFORNIA MILFORD, CONN.

If you write maker identify as IEN - 13856

Versatile in name
Versatile in use



Quaker

VERSATILE HOSE

How's this for versatility? Whether for air, gas, oil, water, spray solutions, paint, or even acids, here is the hose that can carry them all. Quaker Versatile hose gives excellent performance in a multitude of heavy duty uses, yet is light in weight and very flexible. Ideal for maintenance jobs. Cuts down inventory stocks, storage space and remnant ends. Long lasting, non-porous, oil resistant. Made to high Quaker quality standards. Let your next order be for Quaker Versatile hose.

Write for name of nearest distributor

QUAKER RUBBER CORPORATION
DIVISION OF H. K. PORTER COMPANY, INC.
OF PITTSBURGH
Dept. E, Philadelphia 24, Pa.
Branches in Principal Cities

If you write maker identify as IEN - 13857

● It'll pay you to find out about WECO Wing Unions and the many places they can be used in your piping layouts. WECO Wing Unions are easier and quicker to connect — the ball and cone metal-to-metal seat lines up and seals perfectly with a few hammer blows on the wing nut.

Send for the bulletin described below and you'll see why there's a place in your piping for WECO Wing Unions.

Send for this new bulletin which has been prepared especially for you. It gives all the facts about WECO Wing Unions, which are available in 1,000 to 15,000 p.s.i. and sizes 1" through 10".

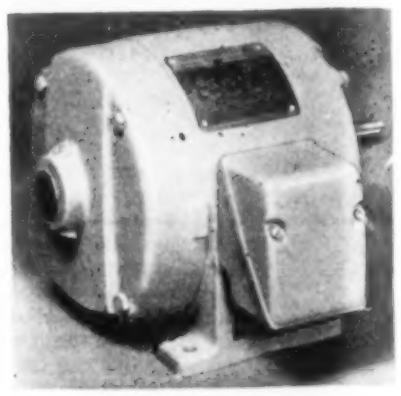
It's Wise to Standardize with... WECO ...

WELL EQUIPMENT MFG. CORP.
Division of Chiksan Company
HOUSTON 1, TEXAS
CHIKSAN COMPANY
Bren, Calif. Chicago 28, Ill. Newark 2, N. J.
CHIKSAN EXPORT COMPANY, Bren, Calif. Newark 2, N. J.
Manufacturers and Distributors of Oilfield, Refining, Marine and Industrial Equipment

If you write maker identify as IEN - 13859

MOTOR . . Polyphase induction, drip proof, 1 to 2 hp. at 1,800 rpm.

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.



It hums pleasingly

Tri-Clad 55 designates new design in the company's line of polyphase induction motors in both drip proof and totally enclosed assemblies. The new motor, rating for rating, averages less by 50 per cent in volume and by 22 per cent in weight than the previous design. It is available at present in the new NEMA 182 and 184 frame sizes in 1, 1½ and 2-hp. ratings for continuous duty at 1,800 rpm. The present line includes the horizontal drip proof and totally enclosed fan cooled designs and a line of gear motors.

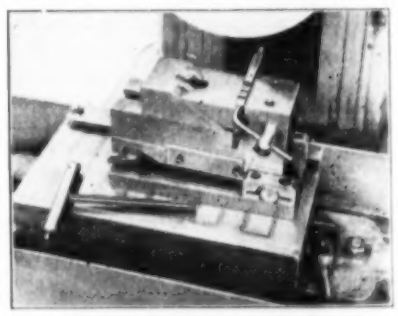
Polyester film, eight times the strength of the previous film, is employed to insulate the phases and slot tubes in the stator. It is used with Formex wire, a new Glyptal varnish, and a silicone Drifilm dip. Double-end ventilation cools the motor by drawing air in through baffled passages under both end shields and forcing it out through louvers on the frame sides. Electric parts are in the cast iron frame in the totally enclosed design. "Jet" ventilation blankets the frame with cooling air.

Overall sound level has been reduced and altered to a frequency that is not annoying to the human ear. The sealed bearings are packed with a new grease which will last about five times longer than the grease previously used.

If you write maker identify as IEN - 13860

VISE . . Precision hand operated to position work on a machine table

Source: J & S TOOL CO.
642-46 W. Mount Pleasant Ave., Livingston, N. J.



Loads, unloads quickly

Square Perfect designates a new vise for work requiring precision set-up on a machine table. The assembly is guaranteed square within 0.0001 in. in 1 in. in all four positions. It is characterized by downward movement of its movable jaw to force work pieces solidly against the base as well as to grip them between the jaws. The clamping jaw swivels so tapered or odd shaped work pieces can be secured. It also takes a V-block to hold round stock.

Jaw opening is to 3 inches. Round stock capacity is from $\frac{1}{16}$ to 2½ inches. Construction is in oil hardened tool steel ground and stabilized in liquid nitrogen. List price is $190, including the vise and a sine bar. List is $95 for the vise only. A vee and clamp add $12.50. A leather carrying case adds $10.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13861

A PAID NEWS ADVERTISEMENT BY THE FLEXHAUST CO.

Move Air or Fumes ECONOMICALLY with new PORTOVENT* Ducting

Available in sizes 4 in. ID to 36 in. ID

This new spiral-wire reinforced ducting has many features which can mean savings in time and money.

11 in. diameter PORTOVENT extended and compressed

First cost is low. Portovent is easy to connect and install. It can be cut to any length on the job with no weakening or raveling, because it has fully bonded seams. Portovent has excellent lengthwise compressibility . . . is easy to transport and store . . . maintains large sections on sharp bends . . . has excellent air flow characteristics.

Portovent is made with Nylon base (Type SY) or cotton base (Type SC). Both are impregnated with age-resisting Neoprene compound.

Write today for details on this new Portovent Ducting.

*Trade-marks

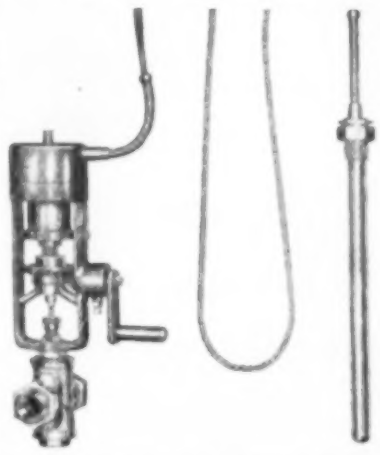
THE FLEXAUST COMPANY
Dept. IE-12 100 Park Avenue, New York 17, N. Y.
Formerly American Ventilating Hose Co.

FLEXAUST* PORTOVENT BLOFLEX*

If you write maker identify as IEN - 13862

EASY QUICK-CHANGE TEMPERATURE CONTROL

...with Sylphon Regulator No. 923-Q

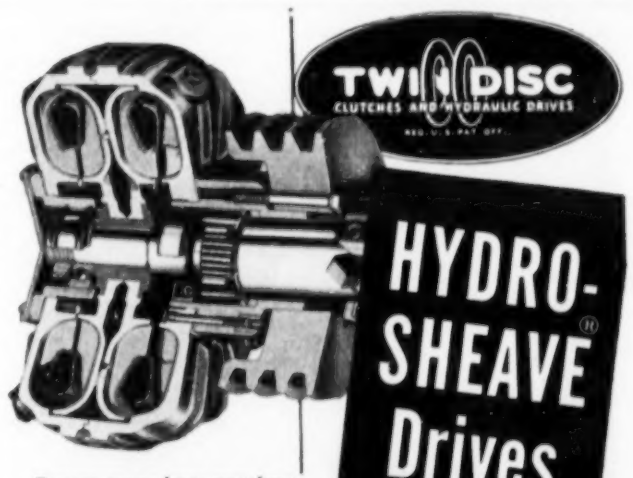


● Simple turn of the crank adjusts temperature to the setting desired. Ideal for process control, especially batch processing. More accurate than conventional hand-wheel type regulators. Dependable, neat, compact. Used with open and closed tanks, bottle washers, glue kettles, dish-washing machines, slashers, etc. Write for information about No. 923-Q, or other Sylphon Regulators for wide variety of temperature control needs. Ask for Catalog XN-D.

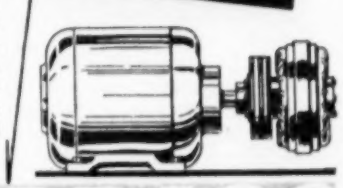
Robertshaw-Fulton CONTROLS COMPANY

FULTON SYLPHON DIVISION
KNOXVILLE 1, TENN.

If you write maker identify as IEN - 13863



Prevent motor burn-outs from heavy starting loads, by slipping Twin Disc Hydro-Sheave Drives on the end of your motor shafts. Twin Disc Double-Circuit design fluid coupling cushions overloads; permits motor to accelerate to efficient speed and pick up loads smoothly. For motors (and engines) from ¼ to 50 hp. Write for name of nearest Authorized Hydraulic Dealer.



TWIN DISC

TWIN DISC CLUTCH COMPANY, Racine, Wisconsin • HYDRAULIC DIVISION, Rockford, Illinois

BRANCHES: CLEVELAND • DALLAS • DETROIT • LOS ANGELES • NEWARK • NEW ORLEANS • SEATTLE • TULSA

If you write maker identify as IEN - 13864

Over 85% of the torque wrenches used in industry are

STURTEVANT TORQUE WRENCHES

Read by Sight, Sound or Feel

- Permanently Accurate
- Practically Indestructible
- Faster—Easier to use
- Automatic Release
- All Capacities

in inch ounces
...inch pounds
...foot pounds
(All sizes from 0-6000 ft. lbs.)

Every manufacturer, design and production man should have this valuable data. Sent upon request.

P.A. STURTEVANT CO.
ADDISON QUALITY ILLINOIS

If you write maker identify as **IEN - 13865**

measure tension Accurately!

When you equip your shop or laboratory with Apco Mossberg Torque Screw Drivers, testing or measuring final tension on precision fasteners is quicker...easier...and infinitely more accurate. Here's why.

Apco Torque Drivers are especially designed for maximum convenience, precision performance. Large, easy-to-read dials assure instantaneous measurements. Lighter, stronger construction makes them easy to handle . . . simple to operate. There are no springs or delicate parts to get out of kilter.

What's more, every Apco driver—from the 0 to 6 in. oz. size to the 0 to 24 in. oz. models with large positive and positive-negative dials—comes complete with a standard Stanley tool holder to accomodate interchangeable bits. With an Apco Driver, you can tighten or test torque on *all* types of fasteners—including light plastic screws.

Get the full facts on Apco Mossberg Torque Tools today! Contact your distributor or write direct. Apco Mossberg Co., 171 Lamb Street, Attleboro, Mass., U.S.A.

APCO MOSSBERG CO.
ATTLEBORO, MASS.

If you write maker identify as **IEN - 13866**

Moisture cannot penetrate the one-piece Neoprene body of a JOY electrical plug . . . when engaged, even its contacts are enclosed in a protective Neoprene housing through the *cork-like* action of JOY's famous water-seal. Permanently vulcanized to cable, it cannot crack . . . won't lose its shape . . . and requires no special considerations to insure a long life of useful service. A favorite since '26, JOY electrical connectors are now available in styles and sizes for nearly any portable electrical power transmission need. Why risk electrical misfits when the best actually costs less, in the long run? For more details ask for your free copy of Bulletin MC108 today!

ME 152.4

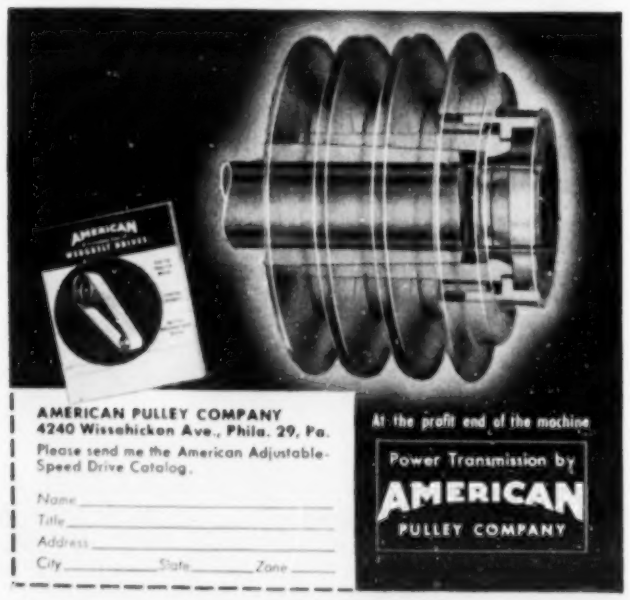
MORE THAN 100 YEARS OF ENGINEERING LEADERSHIP

JOY MANUFACTURING COMPANY
HENRY W. OLIVER BUILDING, PITTSBURGH 22, PENNSYLVANIA
IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LTD., GALT, ONTARIO

If you write maker identify as **IEN - 13867**

ADJUST SPEED IN A HURRY WITH THIS LOW-COST DRIVE . . . TO A SPLIT RPM

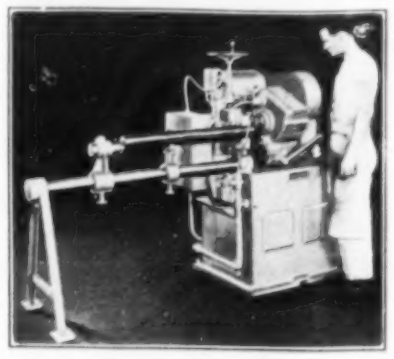
With this low-cost American Adjustable-Speed Drive you can change driven speeds as much as 100%! A simple screw adjustment on the sheave changes its effective pitch diameter quickly, easily . . . permits you to obtain optimum driving speed for any operation; synchronize production lines; compensate for variations from rated motor speeds or calculated speeds of belt drives. Widely used in textile, chemical, mining and many other industries. Write today for free catalog. No obligation.



If you write maker identify as **IEN - 13868**

MILLING . . Single end machine to mill and center the ends of shafts

Source: SUNDSTRAND MACHINE TOOL CO.
2529-33 Eleventh St., Rockford, Ill.



Sundstrand No. 0

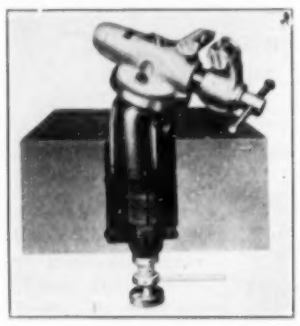
Shafts measuring ¾ to 3½ in. in diameter and 5 to 48 in. in length can be applied in this new machine with its double spindle rocker type head, first to mill an end and then to center drill the end. After one end is finished, the work is reversed and the cycle is repeated to complete the job.

The rocker type cutter head is motor driven and can be set to make a pass across the end of the work or to hold in stationary position centrally with the work holding fixture while the center hole is being drilled. The fixture is adjustable for varying work diameters. An outboard work rest and an outboard center are mounted on a shaft extending to the left to a floor support. Power feed and clamping can be supplied to specification for center drill and work.

If you write maker identify as **IEN - 13869**

HANDLING . . Work positioner rates 1,000 lb., mounts vise or fixture

Source: WILTON TOOL MFG. CO.
927-39 Wrightswood Ave., Chicago 14, Ill.



Catalog 109

New unit, rating 1,000 lb., has been added to the company's PowRarm line. It is fitted with a mounting plate for vertical or horizontal application on a bench or machine. It carries a base on a ball and socket arrangement to take a work fixture, or one of the company's vises as shown in the illustration.

The plate can be partially or wholly released for repositioning and then tightened by application of hydraulic pressure to hold in a set position. The new unit represents extension in load capacity from a previous maximum of 150 pounds.

If you write maker identify as **IEN - 13870**

Window surfaces can be protected, while trim is being painted, by spray application of a new strippable material known as Copeel Strippable plastic coating SV442. The material also can be brushed in place. It air dries in 15 to 20 minutes. When painting has been completed on the trim the plastic can be stripped from the window surfaces. It can be employed with most types of paint. Maas & Waldstein Co., 2130 McCarter Highway, Dept. IEN, Newark 4, N. J., is the manufacturer of the new material.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 13871**

A CLEVELAND *air* vibrator on your handling devices will get stubborn materials moving like clockwork.

We've solved a wide variety of arching, bridging and plugging problems on a broad industrial front with our complete line of air vibrators.

There's a size and type, either quiet, air-cushioned or standard metallic impact, to fit your particular need. Engineering recommendations will gladly be supplied without charge.

Write for catalog No. 109.

THE CLEVELAND VIBRATOR COMPANY
2736 Clinton Avenue • Cleveland 13, Ohio

If you write maker identify as **IEN - 13872**

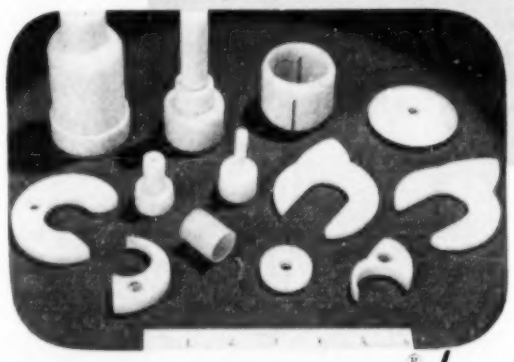
KINNEY PUMP STANDS UP

This pump—a Kinney Heliquad Model HQA 147-31A—has already seen nearly a decade of service at the Lake Charles, La. plant of Cities Service Refining Corp. The Kinney Heliquad is a slow speed, high efficiency rotary pump of unique design, employing steep helical rotors which are ideal for handling heavy oils and other viscous and non-viscous materials. Find out how this super-dependable pump can help in your plant. Send for Bulletin L-51. Kinney Manufacturing Co.—manufacturers of liquid and vacuum pumps. Representatives throughout the United States and in foreign countries.

KINNEY MFG. CO. • SUBSIDIARY
THE NEW YORK AIR BRAKE COMPANY
3564 WASHINGTON STREET • BOSTON 30 • MASS.

If you write maker identify as **IEN - 13873**

NOW YOU CAN MAKE YOUR OWN NYLON REPAIR PARTS



fabricated from **POLYPENCO** / nylon shapes

Immediate delivery of POLYPENCO nylon rod, tubing, strip and slab. We'll help you fabricate.

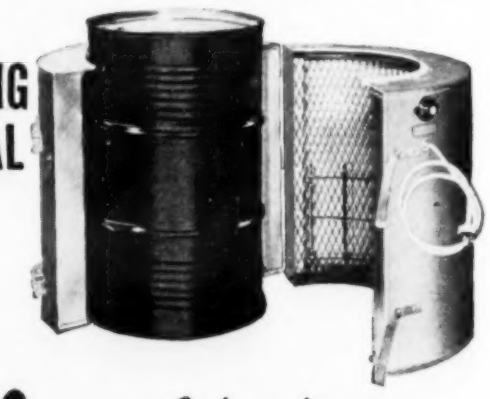
- Make one part or hundreds economically on standard metalworking tools
- Reduce wear on gears, bearings, gaskets, cam followers, etc.
- Eliminate lubrication
- Eliminate corrosion on exposed surfaces
- Eliminate backlash and noise
- Get top performance in every part with quality-controlled Polypenco nylon shapes

POLYPENCO NYLON WRITE FOR GENERAL BULLETIN

nylon and Teflon*—other non-metallic/stock shapes
finished parts also available to your specifications
The POLYMER CORPORATION of Penna. • Reading, Penna.
*trademark for Du Pont tetrafluoroethylene resin

If you write maker identify as **IEN - 13874**

WARMS ANYTHING IN METAL DRUMS UP TO 450°F



Palmer *Automatic* **DRUM WARMER**

A portable electric oven in two models for 55 or for 30 gallon steel drums.
Saves Time—Saves Money. Makes removal from drum by dipping, pouring or pumping, easy and convenient, for any viscous material that handles better when warm.
Operates automatically and economically. Two hinged halves, well insulated, fit around drum at point of use—eliminates handling hot drums.
Supplied for 208, 230 or 460 volts, single, or three phase. Catalogue, prices and specifications on request. Write today!

HAROLD L. Palmer COMPANY
2980 West Davison Ave.
Detroit 6, Michigan

If you write maker identify as IEN - 13875

New! Low-Cost! - Wide-Range!

VARIABLE Speed Sheaves

Easily Attached to Any Machine

1/15 TO 15 HP.
RATIOS UP TO 8:1

● Simple, sturdy Speed Selector Sheaves are applied to any machine in only a few minutes . . . giving you wide-range speed control at extremely low cost. You get wide speed variations with standard V-belts, since two variable pitch sheaves are used. Eliminates bulky sliding motor bases, movable jackshafts and wide, high-cost special V-belts.

- Standard V-belts
- Automatic belt alignment
- Fixed shaft centers
- LOW COST

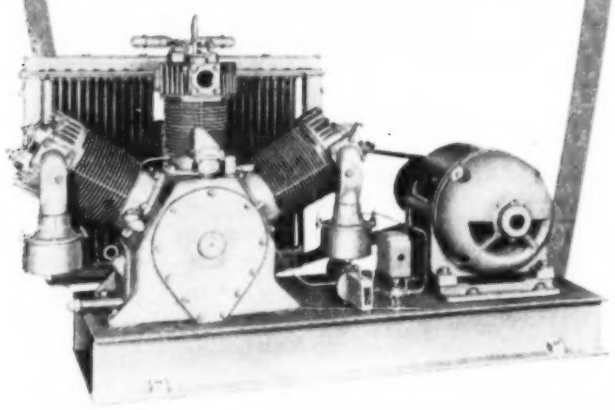
Write FOR FREE BULLETIN

SPEED SELECTOR INC.
118-A Noble Court • Cleveland 13, Ohio

If you write maker identify as IEN - 13876

for performance and efficiency... you can't beat the Westinghouse

3-CMB AIR COMPRESSOR



• If you are looking for the same kind of dependable Air Compressor performance that railroads require for their braking systems, install the Westinghouse 3-CMB Air Compressor. It's actually the same sturdy unit the railroads use, but mounted in a complete bedplate unit for industrial use.

The 3-CMB Air Compressor is a two-stage unit, equipped with a large intercooler to reduce temperatures between stages. That means high volumetric and power efficiency. The 3-CMB is designed for continuous operation at 150 psi. And dual control lets you shift between continuous running and start-stop operation at the turn of a lever.

You can get the Westinghouse 3-CMB Air Compressor in 25, 30 and 40 hp motor sizes with 138, 161 and 190 c.f.m. displacement. See your Westinghouse Air Compressor Dealer or send for our Bulletin 9452-12.

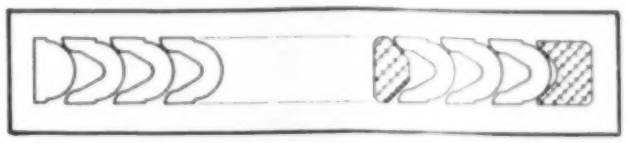
Westinghouse Air Brake COMPANY

INDUSTRIAL PRODUCTS DIVISION WILMERDING, PENNA.
Factory Branch: Emeryville, Calif.
In Canada: Canadian Westinghouse Co., Ltd., Hamilton, Ontario

If you write maker identify as IEN - 13878

SEALING . . Teflon U-rings for rotating and reciprocating shafts

Source: HALOGEN INSULATOR & STEEL CORP.
Franklin & Sarah Sts., Franklin Park, Ill.



Technical data in bulletin P-1000

Triple Action designates a new teflon ring that applies in a stuffing box in assemblies of two or more units. It is used with a male adapter in the bottom of the box and can employ a female adapter under the gland in given installations. The ring lip is shaped to seal correctly with minimized pressure against both the shaft and the box wall.

Section width ranges from 1/8 to 3/4 inch. Depth, measured axially over two rings and a male adapter, is 0.3 to 1.85 inches. Five rings and the male adapter range from 0.6 to 3.65 inches. The rings are available to specification for shaft diameter. Application can be made to seal against both pressure and vacuum by installing two sets facing in opposite directions. In a valve test, a set of four rings sealed 10,000 lb. successfully.

If you write maker identify as IEN - 13879

CONVEYING . . Power driven curve mounts 2 in. rollers and 1/3 hp. motor

Source: HARRY J. FERGUSON COMPANY
115 West Ave., Dept. IEN, Jenkintown, Pa.

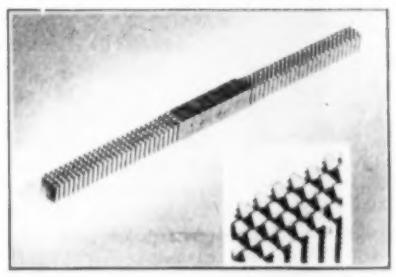
For use with gravity conveyors

Streamliner designates a new power driven roller type curve assembled in 5½ by 10-in. steel channels. The curve is available in 90 and 180-deg. turns with the rollers on 4 or 6-in. centers. Width between channels can be any dimension, in 2-in. increments, between 10 and 30 inches. The motor operates on 110/220-volt 60-cycle single-phase ac. It drives a reducer and chain to the rollers. It is equipped with reversing control.

If you write maker identify as IEN - 13880

THREADING . . File type cutter to restore damaged screw threads

Source: REIFF & NESTOR COMPANY
10 Reiff Ave., Dept. IEN, Lykens, Pa.



For maintenance use

Nu-Trix is a new file type tool measuring 8½ in. in length by 7/16 in. in square section. It carries eight sets of teeth for eight thread sizes on each unit. Number 1 is for National coarse threads from 11 to 24 threads per inch. Number 2 is for SAE threads from 9 to 32 per inch. A few quick passes across a damaged thread section removes burrs and deformed metal and reshapes the threads. List price is $2.50 each.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13881

If you write maker identify as IEN - 13882

BROWNHOIST BUILDS BETTER BUCKETS FROM FACTORY FOR LESS

- **BUY DIRECT**
- **ROPE REEVE, LINK TYPE POWER WHEEL**
- **WRITE FOR CATALOG**

INDUSTRIAL BROWNHOIST CORP.
BAY CITY, MICHIGAN 156

If you write maker identify as IEN - 13883

Speed Up Material Handling

Here's a handy, mobile crane for lifting or loading jobs around your plant. Ideal for dismantling, moving or erecting machinery . . . loading and unloading structural iron, pipe, bars, lumber and equipment of all types. The UNIT 357 is self-propelled . . . rides on rubber at road travel speed . . . is easy to maneuver even in cramped yard conditions. Operated by ONE man . . . powered by ONE engine . . . swings in a 360° circle. Full vision cab gives complete visibility. Promotes Safety. Write for Catalog.

UNIT CRANE & SHOVEL CORP.
6605 W. Burnham Street, Milwaukee 14, Wis., U. S. A.

UNIT
CRANES • CLAMSHELLS • MAGNETS

If you write maker identify as IEN - 13884

MAXAW 800
magic pivot does it!

HEAVY DUTY—ALL BALL AND ROLLER BEARING—INDUSTRIAL QUALITY

$89.50

Out-performs saws selling up to $145!

Here's the saw that bears down with that *extra cushion* of power and sings through the tougher cutting jobs in maintenance and industrial sawing. Cuts full 2-in. rough or semi-dressed lumber *with blade to spare*—2¾" on a straight cut, and 2 9/32" on a 45° bevel. **magic • pivot** does it!

And **magic • pivot** cuts down saw weight . . . MAXAW 800 weighs only 14 lbs.—⅓ less than conventional 8-in. saws . . . puts less handicap on men and muscles. Get all the facts—do more—save more—with **magic • pivot** MAXAW 800!

Free Pamphlet!— Find out what **magic • pivot** can do for you. Send for Pamphlet 1-123.

Cummins-Chicago Corp.
DIVISIONS
Cummins INDUSTRIALS • Cummins Portable Tools
4740 N. Ravenswood Ave. • Chicago 40, Illinois
IN CANADA: 334 Leader Ave., Toronto

If you write maker identify as **IEN - 13885**

If you write maker identify as **IEN - 13886**

CHECK THESE ADVANTAGES—

New method of impact motion ✓ Hard hitting, powerful blow ✓ No kick on armature or operator ✓ Rugged, finest materials ✓ Dependable performance ✓ Compact, fits tight places ✓ Light weight — one hand operation ✓ Portable-plug in anywhere (A.C. or D.C.) ✓ Adaptable — with tools for every kind of work ✓ Easy maintenance, simple lubrication ✓ Keeps cool with built-in fan ✓ Power head can be rotated 180° ✓ Low in cost — can save time, trouble, money for you!

DOES HUNDREDS OF DIFFERENT JOBS

Drills Concrete • Drills Masonry • Cuts Sheet Metal • Chips or Channels Concrete or Metal • Cleans Mortar Joints • Scales Rust • Strips Old Flooring • Caulks Soil Pipe • Cleans and Peens Welded Joints

***Write* FOR CATALOG**
On "Super Slugger" and Line of Tools
Manufactured by Noble & Stanton, Inc., Bedford, Ohio

TEMPO PRODUCTS CO.

☐ Please Send Catalog, Prices and Complete Data
☐ Please Arrange Demonstration of Super Slugger

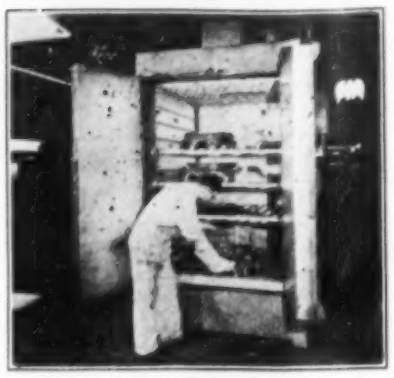
NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____ C

Dealers—Write for Information

If you write maker identify as **IEN - 13888**

HEATING . . Gas or electric oven for stress and embrittlement relief

Source: DESPATCH OVEN CO.
617-21 S. E. 8th St., Minneapolis 14, Minn.



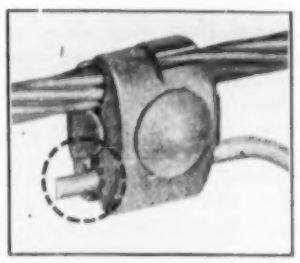
Bulletin 200

Stress relief for parts that have been welded and relief from embrittlement, following plating on crankcases, landing gears, couplings, propeller shafts and other aircraft parts, are the purpose for which this gas or electric operated oven was developed. Temperature is to 550 deg. F. Uniform temperature is held for work placed on the movable shelves or suspended by means of hooks from the loading rack at the top. Inside dimensions are 48 by 48 by 72 inches.

If you write maker identify as **IEN - 13889**

CONNECTOR . . Screw type clamp secures to cable for tap-off conductor

Source: JASPER BLACKBURN CORP.
33-37 Madison St., St. Louis 6, Mo.

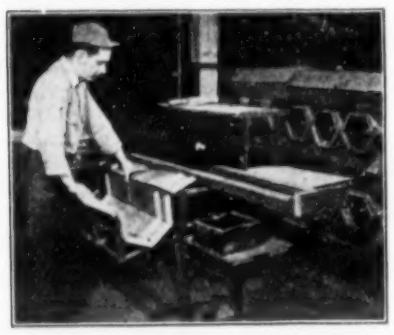


Applies quickly

The aluminum body of this new Parallel Groove clamp type connector is pressure cast around a pronged copper liner that takes the tap-off conductor in this new clamp. The aluminum contracts as it cools to make a tight solderless connection on the copper to hold it securely in place and to seal out moisture. The two part clamp adjusts to a range of cable and conductor sizes. It is held in place by a bolt and nut.

If you write maker identify as **IEN - 13890**

An assembled string of six high-voltage insulators can be enclosed for protection in a new open end wirebound crate designed by General Box Co. 1823-27 Miner St., Des Plaines, Ill. Interior cleats hold the insulators in place endwise. Six wire loops, binding the crate, can be unhooked without need for tools. The insulator string can be installed with the crate in place to continue protection until job is completed.



All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 13891**

Revolving turntable allows the operator to work all around the casting without stop for re-positioning . . . an addition to the standard Wolverine rectangular benches — Provides: • Better dust collection due to higher velocity. • New design, permitting exhaust outdoors where required, or return to room if desired. • Standard velocity, 300 feet per minute, and, if application requires, higher velocities available up to 800 feet per minute. • Ideal system for collecting dust from grinding, polishing and sanding operations.

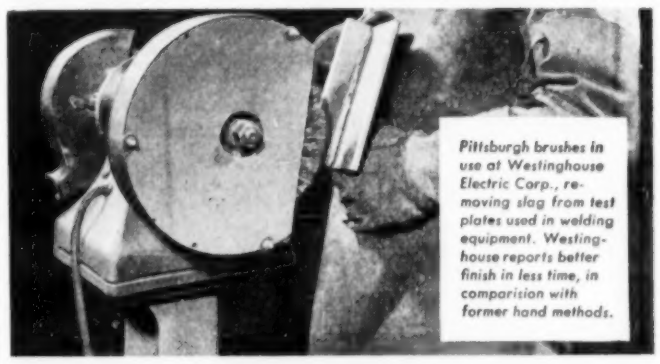
Heavy duty industrial viscous filters in rear compartment remove dust from air stream and axial flow fan in top of rear compartment discharges vertically back into the room or outdoors if required.

Write for descriptive bulletin, Dept. D

WOLVERINE EQUIPMENT CO.
31 MAIN ST., CAMBRIDGE 42, MASS.

If you write maker identify as **IEN - 13892**

If you write maker identify as **IEN - 13893**



Pittsburgh brushes in use at Westinghouse Electric Corp., removing slag from test plates used in welding equipment. Westinghouse reports better finish in less time, in comparision with former hand methods.

Replace hand finishing with power-driven Pittsburgh Brushes for

Better Cleaning Lower Labor Costs Fewer Rejects

—as these companies did:

Removal of imbedded slag in welding test plates formerly was done by hand at the Westinghouse Electric Corp., Trafford, Pa., using a wire brush and welder's hammer. Pittsburgh brushes, powered by a direct-drive ½ h.p. motor, now remove more slag in less time, and produce a better finish. In addition, Westinghouse reports their Pittsburgh brushes "stand up better than average in use."

Complete cleaning of dried concrete, rust and scale from steel frames used in concrete forming is essential prior to re-using the forms. Pittsburgh wire brushes were installed at the Universal Form Clamp Co., Chicago. Working on a conveyor-fed machine, the Pittsburgh brushes now remove all foreign material at a rate of 50 pieces per hour, replacing former laborious hand brushing and scraping.

De-scaling preheated bar stock at the Dominion Forge & Stamping Co., Ltd., Canada, was formerly done by hand scraping. This never did a complete job, and inclusions resulted which produced defective forgings. Pittsburgh brushes, on specially-designed machines, now do the job, and have "increased efficiency, decreased the amount of scrap, improved work quality, and saved labor."

WRITE TODAY FOR FREE BOOKLET!

Write today for a free copy of our booklet that shows, through actual case histories, how Pittsburgh cuts brushing costs. Address: PITTSBURGH PLATE GLASS COMPANY, *Brush Div.*, Dept. W-16, 3221 Frederick Avenue, Baltimore 29, Maryland.

PITTSBURGH
Power Driven
BRUSHES
BRUSHES • PAINTS • GLASS • CHEMICALS • PLASTICS • FIBER GLASS
PITTSBURGH PLATE GLASS COMPANY

If you write maker identify as IEN - 13895

Wiring Overloaded?

CHECK IT!

...WITH THE SPRAGUE

Adequate Wiring Analyzer

This compact Sprague instrument checks wiring to see if it's adequate for present or contemplated loads.

See the effect of increasing loads on wiring *right at the spot!* Direct reading meter indicates percentage voltage drop on 115 or 230 volt circuits under load *without troublesome calculations.*

Connectors for convenience outlets, equipment, panel boards, etc. are furnished—ideal for industrial, utility, and field use.

Write for Bulletin PF-600

SPRAGUE ELECTRIC COMPANY
165 Marshall Street, North Adams, Massachusetts

SPRAGUE
PIONEERS IN ELECTRIC and ELECTRONIC DEVELOPMENT

If you write maker identify as IEN - 13896

Plugmold 2000 puts **plenty** of power **outlets** wherever you need them

Production's a lot more efficient when your plant has plenty of electrical outlets for power tools, testers, appliances and devices — along the walls or edges of workbenches and tables, right at the point of use. Makeshift wiring and a tangle of extension cords are dangerous to both workers and the work.

Plugmold puts safe, permanent, closely-spaced outlets everywhere in your plant — in your offices, too. It's the fastest, easiest, cheapest way to provide multiple outlets. Write today for full information.

WIREMOLD

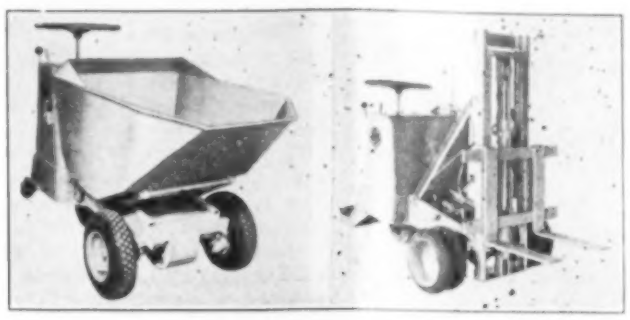
Makers of
PLUGMOLD—multi-outlet systems
WIREMOLD—electrical raceways
PANCAKE—overfloor raceways

THE WIREMOLD COMPANY
HARTFORD 10, CONNECTICUT

If you write maker identify as IEN - 13898

TRUCK . . Engine driven dump unit changes to fork lift or tilt platform

Source: KWIK-MIX COMPANY
3027-31 W. Concordia Ave., Milwaukee 16, Wis.



For general utility in a plant

New design, at several points, features the construction of the Moto-Bug truck that started out some years ago as an engine driven wheelbarrow. Load capacity of the 10 cu. ft. dump body is 1,200 pounds. The 6 hp. engine will drive the loaded truck up a 20 per cent grade. Speed range in forward and reverse is 1½ to 4 mph.

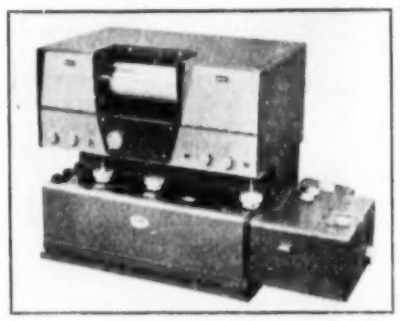
A foot pedal must be held down by the operator to prevent the new internal expanding brakes from setting. Soft core rubber tires cushion the load and operator. They will not puncture. A cog-type V-belt connects the engine to the drive wheels. A vertical lever controls forward, reverse and neutral.

The steering wheel is located comfortably for the operator in standing position. Bronze plates are standard in the clutch. A single cast body latch hook replaces the previous two-hook latch. The truck measures 33 in. in width. It has a turning radius of 61 inches.

If you write maker identify as IEN - 13899

TESTING . . Spectrophotometer designed for rapid automatic operation

Source: BECKMAN INSTRUMENTS INC.
800 Mission St., South Pasadena 1, Calif.



Data File R-58-5

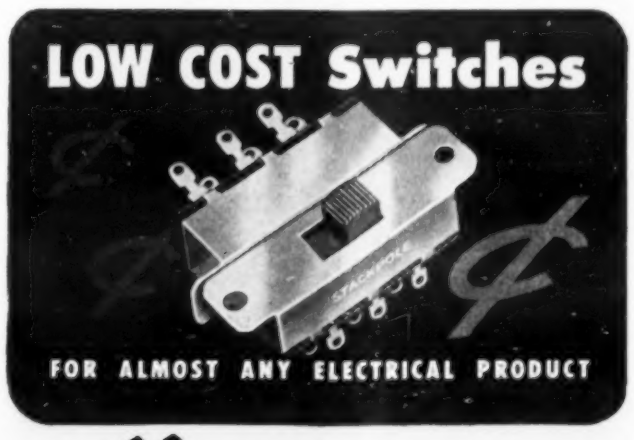
New Model DR spectrophotometer measures and records per cent transmittance in the 210 to 1,000 mu. region of the spectrum, the most generally useful for colorimetric and spectrophotometric analyses. The ultraviolet and near-infrared span is divided into a variety of wave length ranges selectable by the instrument. Three samples can be run simultaneously with each curve plotted in a distinctive color. Eight seconds are required to plot a point for one sample, 10 sec. for two and 12 sec. for all three.

The instrument operates by itself after its controls have been set. The operator changes samples, chart paper and scanning regions. The assembly is built around the single beam quartz monochromator of the company's Model-DU spectrophotometer. The automatic portion of the new instrument can be attached to any Model-DU now in service.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13900

LOW COST Switches



16 STANDARD DESIGNS

INCLUDING 3 AMP. SLIDE SWITCH TYPES

Priced low, ruggedly made, Stackpole slide switches are ideal for toys, radios, phonographs, automobiles, and electrical appliances and equipment of all types. 1 to 6 pole types, up to 4 positions, optional detent, spring return, covers and other features. Write for Bulletin RC-7C.

STACKPOLE CARBON CO., St. Marys, Pa.

STACKPOLE

OTHER STACKPOLE PRODUCTS:
Motor Brushes • Electrical Contacts • Permanent Magnets • Fixed and Variable Resistors • Iron Cores and dozens of molded carbon and graphite specialties • Ceramag®

If you write maker identify as IEN - 13901

Safe Heat

...and plenty of it 600° F

For Asphalt Melting, Coating and Impregnating

When using the Merrill System of heating with hot oil, the maximum pressure even at 600°F. is only 25 # at point of use. No odors or dangerous gases are produced, and product temperatures are held to 2°F. if desired.

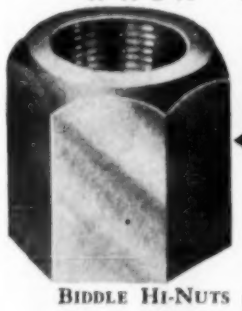
Get full details on how the Merrill System can help you with your high temperature problems by writing now.

Parks-Cramer Company
ENGINEERS and CONTRACTORS
Fitchburg 2, Massachusetts

If you write maker identify as IEN - 13902

Twice the Grip...

WHEN GRIP COUNTS



BIDDLE HI-NUTS

BIDDLE HI-NUTS are made for greater gripping power. Where vibration is high, where motion takes over, the additional gripping power of BIDDLE HI-NUTS takes control. Made from B 1113 steel, machined from the bar, BIDDLE HI-NUTS are threaded to SAE Specifications. Sizes from ½ inch to 1¼ inches, heights from 15/16th to 1¾ inches, with diameters across the flats from ¾ to 1¾ inches. Put extra grip into the jobs where extra grip counts . . . with BIDDLE HI-NUTS.

Write today for more complete information and specifications.

NATIONAL SCREW MACHINE PRODUCTS ASSOCIATION

BIDDLE SCREW PRODUCTS COMPANY
SHERIDAN, INDIANA

If you write maker identify as IEN - 13903

Protects AIR TOOLS AND EQUIPMENT

against rust, scale and condensation in the air line ...provides constant lubrication

The Keller Lubricator-Filter operates automatically when air tools or equipment are in operation. Filter removes moisture as well as solids—easily cleaned by opening drain cock at bottom. Oil feeds from the lubricator through an upright wick—no flooding or waste when tools are not in use.

Transparent bowls show when filter needs draining, or when light spindle oil should be added to lubricator. Write for descriptive Bulletin #65-5.

Send for illustrated descriptive bulletin and detailed information

Keller Tool Company
GRAND HAVEN, MICHIGAN

If you write maker identify as IEN - 13904

Engineered Air Regulation

WHAT DO YOU REQUIRE OF AN AIR REGULATOR?

IS IT CAPACITY?

Kendall Model 10 Air Pressure Regulator gives up to 35 CFM with 90 PSI supply pressure

IS IT ACCURACY?

Increasing flow overcomes downstream line losses by jet tube venturi action in the Kendall Model 10

IS IT FREEDOM FROM SUPPLY PRESSURE INFLUENCE?

50 PSI variation in upstream pressure will result in less than 0.05 PSI change in downstream pressure on dead end service when you use a

KENDALL MODEL 10 AIR PRESSURE REGULATOR

AVAILABLE ¼" or ⅜" N. P. T.
RANGES 0-2, 10, 30, 60, 150 PSIG

Send for BULLETIN 4521

KENDALL CONTROLS CORPORATION
144 MOODY STREET WALTHAM 54, MASS.

If you write maker identify as IEN - 13905

DOLLIN Zinc & Aluminum DIE-CASTINGS

ALL SHAPES

ALL SIZES

ALL LOW COST

Investigate! Leading manufacturers specify Dollin Die-Castings for highest quality at lowest cost. Send prints or samples for quotation—engineering advice at no obligation. Literature on request.

DOLLIN CORPORATION
630 So. 21st St., Irvington 11, N. J.

If you write maker identify as IEN - 13906

115 million cycles without a breakdown!

Torture Test Proves COMAR RELAYS are Tough

Illustration shows a typical Comar Telephone Type "TM" Relay recently subjected to exhaustive tests by a Comar user. Results: 115 million cycles without a breakdown!

Comar relays stand up under severest operating conditions. They are engineered to far exceed normal performance and circuit requirements. Precision workmanship and top quality is your assurance of dependable operation. Comar specializes in relays custom-engineered to fit your needs. Send specifications for our recommendations, no obligation.

COMAR ELECTRIC COMPANY
3349 Addison St.
Chicago 18, Illinois

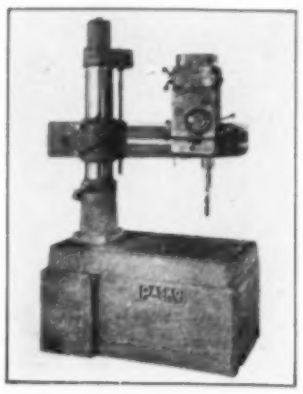
Write For Free Catalog

Relays • Transformers • Solenoids
Switches • Coils • Hermetic Sealing

If you write maker identify as IEN - 13907

DRILLING . . Radial machine, 1 hp. drive for 16 speeds, 4 feeds

Source: PASKO MACHINERY & STEEL CO.
1719 Chicago Drive S. W., Grand Rapids 9, Mich.



Lever controlled locks

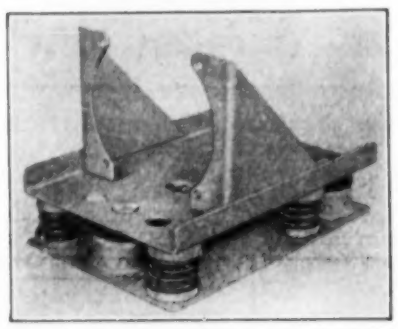
The spindle head in this new radial machine carries a 1-hp. 220/440-volt 3-phase motor. It operates in connection with hardened gears enclosed in the oil filled housing. The shafts are mounted on ball bearings. The spindle is equipped with Timken bearings and carries a No. 3 taper. The head rides on a 36-in. arm that is raised and lowered by screw operation with a ½-hp. motor mounted at the top of the column.

Maximum clearance under the spindle is 32 inches. The table measures 28½ by 48 inches. It is reinforced to take work weighing as much as 5 ton and is mounted on a single piece cast iron base. Floor space measures 50 by 32 inches. Height is 85 inches. List price is $2,375.

If you write maker identify as IEN - 13908

ISOLATING . . Vibration insulator employs resilient metal mesh pads

Source: ROBINSON AVIATION INC.
Teterboro Airport, Dept. IEN, Teterboro, N. J.



Bulletin 750

Illustrated is new assembly, with a mounting fixture for cylindrical equipment, of the company's individual vibration isolators, previously described IEN-6398-50. The assembly shown is intended to support and protect instruments and equipment carried in aircraft. It is adaptable for weights ranging from 2 to 15 lb. by selection of the correct size isolator units.

Each unit consists of a pressed steel housing with a steel load-carrying central stud and a pad of resilient stainless steel mesh on which rests a load carrying flange. The company is prepared to design and manufacture combinations of fixture and pads for specified application.

If you write maker identify as IEN - 13909

Iron-Rubber is a new combination of two sheets of rubber permanently bonded to a central core of expanded metal. The completed sheet can be bent to fit corners without spring back and can be shaped to most any contour. It is available in specified thickness and in any length with width to 36 inches. Application is on equipment normally subjected to excessive wear. A non-reinforced sheet made of rubber only is available also. Maker is Magic Chemical Co., 121 Crescent St., Dept. N-127, Brockton 2, Mass.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13910

Machine flame cutting for every metal-working shop

Cut-O-Matic is NCG's portable motor-driven track guided machine that brings the advantages of machine flame cutting to shops of any size. It costs only $210.00. It weighs only 50 lbs. Easily carried about the shop, it sets up rapidly and cuts steel plates, stacked steel sheets or heavy slabs so cleanly and accurately no further finishing is necessary in most cases. It cuts square or beveled edges, in straight lines, circles, strips and some irregular shapes. It is so versatile, useful, easy to operate that most shops will speed production, save time, labor, handling and materials. Booklet N-134 tells about Cut-O-Matic. Send for a free copy today.

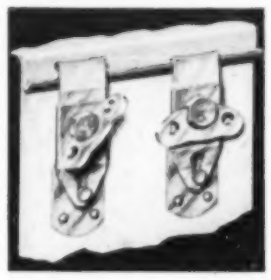
Copyright 1953, National Cylinder Gas Company

NCG® National Cylinder Gas Company
840 N. Michigan Ave., Chicago 11, Illinois

If you write maker identify as IEN - 13911

Have you a similar fastening problem?

File: Simmons LINK-LOCK



When the armed forces needed a positive, high-strength fastening device for instrument housings, transit cases, and storage boxes, Simmons developed LINK-LOCK. This brand-new device works with fingertip pressure, furnishes up to 450-lb. pull-down pressure. Open or closed, it always lies perfectly flat.

LINK-LOCK may be the answer to your fastening problem. If your design involves heavy fastening pressures, watertight sealing, high strength, resistance to impact, write for LINK-LOCK DATA SHEET.

SIMMONS FASTENER CORPORATION, 1758 No. Broadway, Albany 1, N. Y.

Simmons | LINK-LOCK QUICK-LOCK ROTO-LOCK
FASTENERS WITH USES UNLIMITED

If you write maker identify as IEN - 13912

UEI
TEMPERATURE PRESSURE CONTROLS

Improve **YOUR PRODUCT!**

More dependable, more accurate controls bring big sales results!

Type E8N
Indicating Temperature Control, ranges 300° or 600° between −150° to 600° F. calibrated adjustment and ambient compensated.

Type J40
Compact, skeleton pressure control for local mounting to control up to 250 psi in general industrial applications.

Type J96
Sensitive pressure-vacuum control for 30" hg. to 100 psi with explosion-proof housing for hazardous locations.

Progressive manufacturers throughout the country know the importance of having the *right* temperature or pressure control on their products. It really pays off—in product quality and in SALES. Hundreds of companies, of all types, turn to United Electric for the finest controls, to be used as original equipment on their products.

Controls are developed from United's wide line of standard models or are specially built as a result of teamwork by United Electric engineers and the manufacturer's product development group.

We can handle practically any pressure control problem between limits of 30" mercury vacuum to 1000 psi or temperature control problems between limits of −150° F. to 600° F.

Want to know more? Write for our new catalog. It shows pressure and temperature controls for marine, industrial aircraft and representative special purpose uses. And it's yours for the asking.

Write for New free Catalog...

UNITED ELECTRIC CONTROLS CO.
80-I School Street, Watertown, Mass.

If you write maker identify as **IEN - 13914**

PICKS UP DIRT, CHIPS, LIQUIDS, CUTTING OILS

- **Easily**
- **Quickly**
- **Thoroughly**

at less cost than ever before. The American Model No. 500-55 picks up 50 to 100% faster due to a new exclusive air handling feature that produces more power than any vacuum of the same motor rating.

Ideal for flood control, boiler cleaning, sump cleaning and powerful enough for any large or difficult industrial, store or building job. By-pass motor unit can be detached for use as a powerful blower or portable vacuum cleaner. Lid fits any 55 gallon tank, permitting shifting from one drum to another in a matter of seconds for easier disposal. Extra large tank and bag keeps machine operating longer between emptyings.

Simple to operate, nothing to get out of order, sturdily built for years of trouble-free service. The model No. 500-55 is only one of a large line of industrial and building vacuum machines, complete with attachments, all suited to a wide variety of uses and applications.

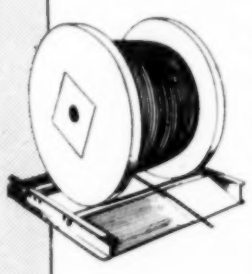
Write for full details today.

AMERICAN CLEANING EQUIPMENT CORP.
2031 South Halsted Street • Chicago 8, Ill.

If you write maker identify as **IEN - 13915**

Simple as A B C

Handle heavy reels easily and safely; remove wire or cable from top or bottom, front or back of reel with



ROLL-A-REEL

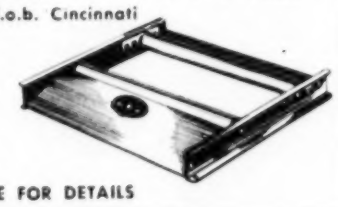
Low slanted front and positive front lock insure quick loading or unloading.

Eliminate jacks and cumbersome handling.

Style A: 2,000 lbs. cap. 37.50
Style B: 4,000 lbs. cap. 75.00
f.o.b. Cincinnati

Carried easily to reels, job or storage.

Sold through wholesalers only.



WRITE FOR DETAILS

ROLL-A-REEL

1100 SYCAMORE AT CENTRAL PARKWAY
CINCINNATI 2, OHIO

If you write maker identify as **IEN - 13916**

YOUR ANSWER TO FLEXIBLE TUBING PROBLEMS

PENFLEX "FLEXINEERING"

THE CORRECT TUBING...PLUS TECHNICAL AID ON EVERY JOB

is the know-how of the Penflex Engineer plus the can-do of Penflex Flexible Metallic Tubing serving you from design board right up to job installation and maintenance. It is the scientific application of the right type of steel, bronze, or aluminum flexible tubing to your air, oil, water, gas, steam, volatiles, or light solids conduction requirements. It is the specific recommendation of the right size and weight flexible tubing—four-wall interlocked or seamless welded corrugated type—in sizes from ⅛" to 24" I.D. And it is the nation-wide supply of Penflex in any quantity where you want it, when you want it.

Get This New Data Book on the complete Penflex line of Flexible Tubing, Hose, Couplings

Pennsylvania Flexible Metallic Tubing Co., Inc.,
7200 Powers Lane, Phila. 42, Pa.

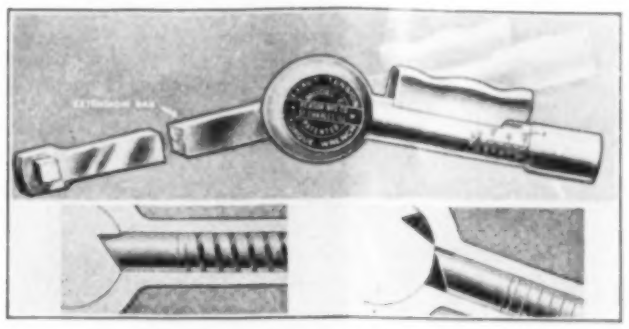
PENFLEX

HEART OF INDUSTRY'S LIFE LINES

If you write maker identify as **IEN - 13917**

WRENCH . . Torque limiting design releases pull at adjustable setting

Source: REASOR MFG. CO.
212-16 S. 13th Ave., St. Charles, Ill.



Spring controls release action

Desired torque is set by turning the cylindrical end of the operating arm, on this new Model-E torque wrench, in connection with micrometer type markings and a scale on the arm. The rotation sets a spring that backs up a cam type plunger engaging the driving head. When the set torque has been reached, as the operator pulls upon the grip mounted on the arm, the cam pulls out of the head to release the arm.

The driving square in the head can be applied direct for maximum torque of 35 foot pounds. A 12-in. extension bar can be added to increase the maximum to 100 ft. lb. or an 18-in. extension for a range between 70 and 175 foot pounds. Upon releasing pull on the handle, after the wrench has "tripped", the spring returns the cam to seated position ready for the next application. List price with a 12-in. extension is $39.50. The wrench alone lists at $36.

If you write maker identify as **IEN - 13918**

VALVE . . Two and three way designs, solenoid operated for air or liquid

Source: AUTOMATIC SWITCH CO.
383 Lakeside Ave., Orange, N. J.

Bulletins EP8262, 8314

Illustrated is a new two-way assembly in the company's Midget line of solenoid operated valves. A similar unit, for three way operation, is the same in general outline except for ⅝ in. greater height. Both designs employ explosion proof solenoids suited for Class 1, Group D hazardous locations. The solenoid enclosures are made of cast iron with ½-in. threaded conduit connection which can be positioned at any point in a circle with reference to the valve body. Operation can be specified on 110 or 220-volt ac. or on 110-volt dc. Valves for other voltages can be specified.

The two way valve is available with a brass or stainless steel body in ⅛ or ¼-in. pipe connections. Four orifice diameters range from 1/16 to $\frac{5}{16}$ inches. Maximum pressure, for ac. operation, is 300 lb. with the 1/16-in. orifice and an ac. solenoid. It is 60 lb. when the orifice diameter measures $\frac{5}{16}$ inch. The three-way valve, also with a brass or stainless steel body, carries ⅛-in. pipe connections and can be supplied with a 3/64 or a 3/32-in. orifice. Maximum pressure, with ac. solenoid operation, is 125 or 45 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 13919**

ANGLE STEEL No. 510 COUNTER CABINET

This handsome beautifully finished cabinet fully enclosed can be used as a counter and storage cabinet.
Ideal for storage purposes where vertical space is limited.
Rigid steel construction throughout, has double locking doors with chrome plated handles.
Shelves are heavy gauge steel, adjustable on ½" centers. (Additional shelves available) Size: width, 36"; height, 42"; depth, 18". Finished in Olive Green or Grey baked enamel. Shipped set-up ready for use.

For additional information send for FREE Literature giving Company Name and Title to

ANGLE STEEL INC.
DEPT. J, PLAINWELL, MICHIGAN

If you write maker identify as **IEN - 13920**

QUIK-LIFT ELECTRIC HOISTS
17 models — 500- to 4,000-lb.

CHALLENGER LIGHTWEIGHT ALL STEEL SPUR-GEAR HOISTS
3 models — ½-, 1-, and 2-ton

OTHER SPUR-GEAR HOISTS
22 models — ¼- to 25-ton

fill all your portable hoist needs from one reliable source

OVER A HUNDRED SIZES AND MODELS OF COFFING HOISTS

Safety-Pull Ratchet Lever Hoists
10 roller-chain models — 1,500- to 30,000-lb.
2 coil-chain models — 1,500- and 3,000-lb.

Mighty-Midget Pullers
2 sizes — 500- and 1,000-lb.

Hoist Binder
3,000-lb. capacity.

Safety Load Binders
2 models — 3,000- and 6,000-lb.

Low Headroom Hoists
12 models — 1½- to 24-ton

I-Beam Trolleys
21 models — ⅛- to 25-ton

Clevis-Connected Hoists
11 models — ¼- to 10-ton

Differential Chain Hoists
2 sizes — ½- and 1-ton

Extended Hand Wheel Hoists
6 models — ¼- to 3-ton

Army-Type Hoists (plain and geared)
11 models — ¼- to 10-ton

The broad Coffing line lets you select exactly the right hoist for the job. For more information on units you need, see your distributor or write Dept. P12.

COFFING HOIST CO. DANVILLE, ILLINOIS

If you write maker identify as **IEN - 13921**

The NEW M·S·A FACEGARD

. . . gives workers the comfort they want —the protection they need

Workers everywhere are giving the new M.S.A. Facegard their vote for the best in comfort and protection against flying objects, abrasives, dusts, chemical splash. And there are good reasons why . . .

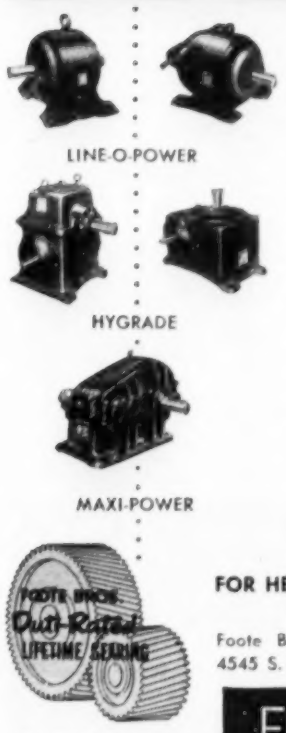
. . . Wide-open spaces between face and visor eliminate the annoying, time-consuming practice of coming up for air. . . . The attractive green half-cap, fiber glass reinforced, is unusually light . . . A foam rubber sweatband cushions headgear against worker's head for comfort . . . Elastic headband, adjustable to all sizes, frees wearer of pressure-points . . . All visors are 12 inches wide with a choice of length, thickness, clear or medium green shade . . . Permits wearing of the popular Dustfoe #55 Respirator when needed. *Write for details today.*

MSA SAFETY EQUIPMENT HEADQUARTERS

MINE SAFETY APPLIANCES CO.
201 North Braddock Avenue
Pittsburgh 8, Pa.
76 Branch Offices in the United States

If you write maker identify as **IEN - 13922**

Set the Pace at SLOW SPEED



This Trademark Stands for the Finest in Industrial Gearing

with

FOOTE BROS. DRIVES

No matter how tough the job, you step down high speeds with ease when Foote Bros. Drives do the work. There's a complete line with an extremely wide range of ratios and capacities—a drive to meet all requirements for heavy-duty service. Solve your slow speed drive problems through the finest gearing in the most compact design — Foote Bros. Drives.

FOR HELPFUL, DETAILED INFORMATION PLEASE WRITE: Dept. IEN

Foote Bros. Gear and Machine Corporation
4545 S. Western Boulevard, Chicago 9, Illinois

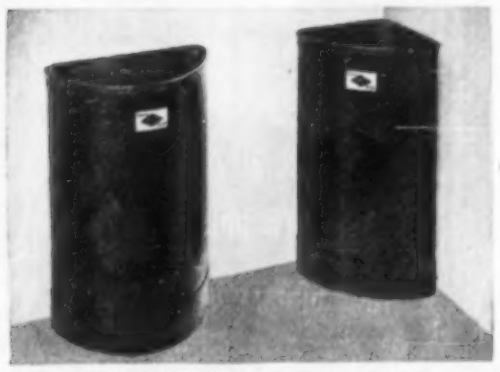
FOOTE BROS.
Better Power Transmission Through Better Gears

If you write maker identify as **IEN - 13923**

LOW COST and SPACE SAVING

DIAMOND VULCANIZED FIBRE

HALF and QUARTER ROUND CANS



They fit snugly against walls and in corners; save floor space. C-D-F Diamond Vulcanized Fibre cans are lightweight, rugged, smooth, economical; resistant to moisture, oil and grease. They belong in every factory, store, hotel. Attractive colors. Prompt deliveries. Sizes to fit your needs. C-D-F has the facilities to supply them in any quantities — from design to finished product. See your C-D-F sales engineer. Write for Catalog R-52; contains complete specifications of all Diamond Vulcanized Fibre Receptacles.

THE NAME TO REMEMBER — DIAMOND FIBRE RECEPTACLES

Continental-Diamond Fibre Company

NEWARK 21, DELAWARE

If you write maker identify as **IEN - 13924**

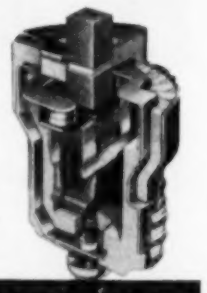
Modernize with

MINI-BREAKER®

. . . the amazing new Permanent Circuit Protector that fits like a fuse in standard Edison base fuse sockets!

Time was when converting "one shot" fuse-protected circuits to a modern permanent type installation was a costly, complicated job. But not so today! Now anyone can do it in a matter of seconds simply by installing amazing new MINI-BREAKERS as *direct replacements* for expendable Edison base fuses . . . and right in existing fuse boxes, too! No additional equipment to buy, no special wiring required, no extra costs of any kind!

NEW SAFETY! NEW CONVENIENCE! MINI-BREAKERS give you positive, pre-tested protection against electrical fire hazards. They trip instantly on "shorts", but have a built-in time lag to handle temporary starting loads and line surges. 100% trip-free, too. Yet, as soon as the circuit is safe again, all you have to do to restore electrical service is press in and release the shock-proof reset button!



LISTED BY U.L.! MINI-BREAKER is a precision-built, inspected "Circuit Protector" . . . the only device of its kind listed by Underwriters' Laboratories, Inc.! Available in 15, 20, and 30 ampere ratings, for A.C. service only, to 125 volt maximum.

See your Electrical Wholesaler-Distributor or send for complete information today

MECHANICAL PRODUCTS, INC.
1824 River Street • Jackson, Michigan

Please rush me full details on new MINI-BREAKER today!

NAME _____

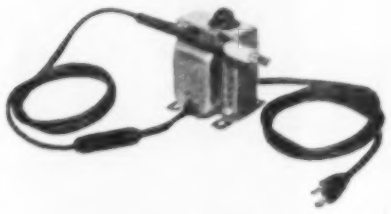
ADDRESS _____

CITY _____ ZONE _____ STATE _____

If you write maker identify as **IEN - 13926**

SOLDERING . . Resistance machine heats on work contact to close circuit

Source: IDEAL INDUSTRIES INC.
1108 Park Ave., Sycamore, Ill.



Rating is to 200 watts

Thermo-Tip is a new transformer type resistance soldering machine that employs a pencil type electrode holder at the end of an extension lead. The two electrode points stand a little apart in the insulated head. They make the contact to close the heating circuit by moving the holder into position. The electrodes will reach into narrow confines. The machine is particularly intended for electronic circuit assemblies and for small mechanisms and instruments.

Screw-in tips, carrying the two electrode points, are interchangeable in metallic tip and carbon tip designs. There is also a single electrode tip. It is employed in connection with a grounding clamp to complete the circuit through the work. Two sizes of light soldering guns, with 1/8 and 1/4 in. chisel tips to plug into the power unit, complete the assembly.

If you write maker identify as **IEN - 13927**

HAMMER . . Triple head pneumatic to remove rust, paint and scale

Source: THOR POWER TOOL CO.
173-77 N. State St., Aurora, Ill.

Stellite tipped pistons

Sealer No. 326 mounts three pistons in its head in place of the usual one. Each piston operates with a rotating-reciprocating action to remove rust, paint and scale from boilers, tanks and structural steel. The hammer is controlled at a valve on its side extension. A lever type throttle can be specified. Weight is 7½ pounds. Overall length, in the assembly shown, is about 12 inches. The head is about 4½ in. in width, can be mounted as shown or in line.

If you write maker identify as **IEN - 13928**

Safety signs, based on National Safety Council and ASA Standards, are available in some 200 stock descriptions and in sizes measuring 2¼ in. in height by 4½ or 9 inches. The signs are printed in three color combinations. The fabric is coated with a self-adhesive backing that applies on plaster, cement, wood, metal with hand pressure. Westline Products Div., Western Lithograph Co., 600 E. 2nd St., Dept. IEN, Los Angeles 54, Calif., will send you a sample and literature.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 13929**

WHEN ARE TWO HEADS BETTER THAN ONE?

FLAT SPRING STEEL is constantly being purchased for completely new end uses. In most of these new applications the desired results are achieved. If, however, the Flat Spring Steel does not perform as hoped, the steel used may be unsuitable for the job, or something may be askew in the material's application.

That's when two heads can be better than one! Roebling is just about the nation's largest producer of High Carbon Flat Spring Steel . . . and Roebling laboratories are always glad to cooperate with manufacturers, designers and engineers who have a problem child. Send details to Wire and Cold Rolled Products Div., John A. Roebling's Sons Corp., Trenton 2, N. J.

A subsidiary of The Colorado Fuel & Iron Corporation

ROEBLING

If you write maker identify as **IEN - 13930**

AA-267

IF you sell your products in rolls (like adhesive tape), or—if you use rolls in production (like printing or coating) then — **better rolls can build your profits** by reducing waste, by increasing production and by improving your products. Get the facts on Camachine roll slitters and rewinders, the **right** model for every material. Write today to

CAMERON MACHINE COMPANY
61 Poplar Street • Brooklyn 1, N. Y.

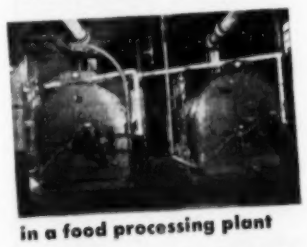
Camachines

If you write maker identify as **IEN - 13931**

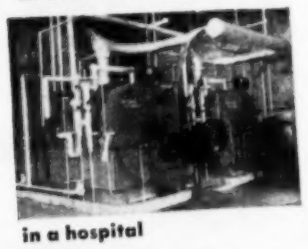
Dutton EconoTHERM EARNS OWNER PRAISE

in a railroad roundhouse

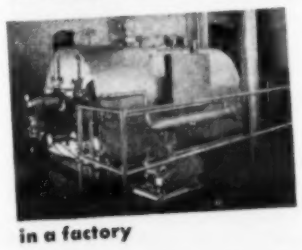
in a modern dairy



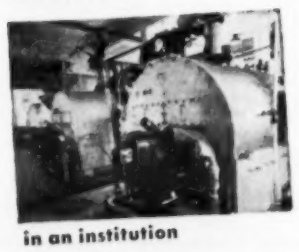
in a food processing plant



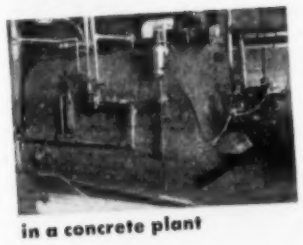
in a hospital



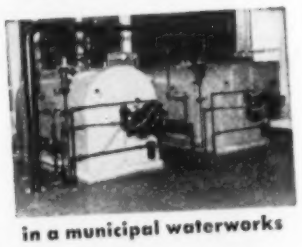
in a factory



in an institution



in a concrete plant



in a municipal waterworks

AND HERE'S WHY!

Verbally and by mail* owners have enthusiastically reported big savings in fuel, labor and space — often all three — thanks to EconoTHERM's efficient Off-center Firing, Rotary Combustion and Automatic Operation.

EconoTHERM gives quick steam with greater safety . . . saves fuel, labor and maintenance expense. Gas or oil fired, sizes are available to 250 H.P.

Get all the facts on the Dutton EconoTHERM's compact, modern packaged design and automatic operating features. See how it can satisfy your steam needs and save *you* money!

*Ask to see the letters!

Write for EconoTherm Bulletin EC-52M

CHECK FIRST with *Dutton*

Dutton **BOILERS**

DIVISION · HAPMAN-DUTTON COMPANY
KALAMAZOO, MICHIGAN • BOILER BUILDERS SINCE 1880
FOUR TYPES SIZES FROM 5 TO 250 H.P.

If you write maker identify as IEN - 13933

Our Man IS YOUR MAN

The M & T representative is backed by a line of welding materials and equipment as complete as any available anywhere. In addition, he is a seasoned, practical welding engineer, well qualified to be of genuine help on your welding problems.

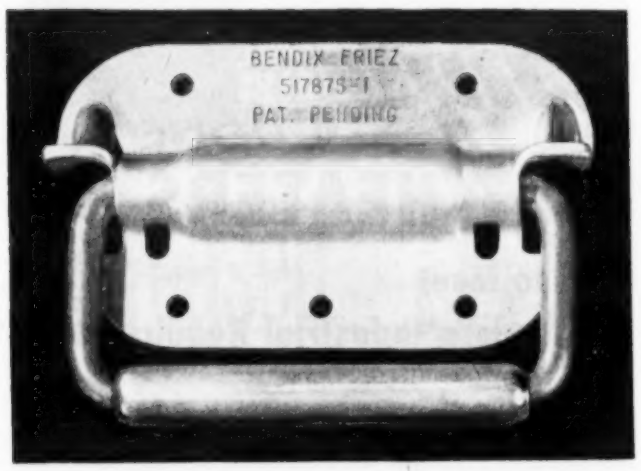
If the latest in welding techniques, equipment and materials can assist you, *our man is your man*—for orders or advice.

DETINNING • THERMIT WELDING • METALS and ALLOYS • ARC WELDING—Materials and Equipment CHEMICALS and ANODES for Electrotinning CERAMIC OPACIFIERS • STABILIZERS for Plastics TIN, ANTIMONY and ZIRCONIUM CHEMICALS

METAL & THERMIT CORPORATION
100 EAST 42ND STREET • NEW YORK 17, N. Y.

Murex Electrodes · Arc Welders · Accessories

If you write maker identify as IEN - 13934



A RUST-PROOF HANDLE!

We call it to the attention of manufacturers of portable equipment . . . carrying cases, parts, boxes or anything that has to be lifted or carried.

It can be riveted or welded to any kind of container. It can be depressed in the surface if you want.

Ruggedly built of aluminum and stainless steel, it is rust proof and rattle proof. It withstands shocks and vibrations. It has a patented "snap-back" feature.

If you've got something that's to be lifted by handles . . . chances are this Bendix-Friez handle is better for you.

It meets military requirements for many specialized equipment uses. Manufacturers who have used them . . . call them, the best handle by far. No order too large or too small. Prompt attention. Write today.

BENDIX FRIEZ

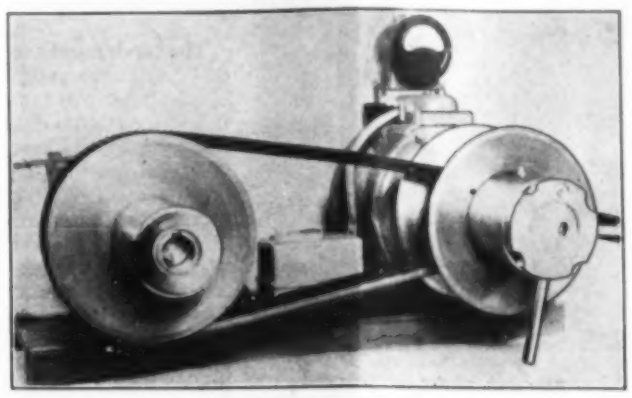
FRIEZ INSTRUMENT
Division of
Bendix AVIATION CORPORATION
1428 Taylor Ave., Balto. 4, Md.

EXPORT SALES
Bendix International Division
204 E.42nd St., New York 17, N.Y. U.S.A.

If you write maker identify as IEN - 13936

DRIVE . . Variable pitch sheave holds center line, singly or in pairs

Source: GUBELIN INTERNATIONAL CORP.
35 W. 53rd St., Dept. IEN, New York 19, N. Y.



Made in Switzerland

Speed ratio is variable, over a 1 to 4 range, employing one of the new Icor stepless variable speed sheaves. The range can be increased to 1 to 16 when a pair is employed and, in this case, it is unnecessary to mount the motor on a sliding base since the belt centers do not change. A feature in the construction is that the two flanges approach each other or retract to increase or decrease the pitch diameter equally on both sides of a center line so the belt position does not change axially.

A gear type equalizing mechanism is employed in the hub and, when two of the sheaves are used together, one is fitted with a stationary sleeve and an adjusting knob at the outer end. The sleeve is held against rotation by a stud that extends radially outward. This sheave is employed on a motor as the driving sheave for belt connection to a second sheave without external adjustment. When one sheave is used alone, the one without adjustment is used with an adjustable motor base.

Six sizes range from about 6⅝ to 15⅜ in. in flange diameter and from a little over ½ to about 1½ in. in bore. Sheave weights range from 5 to 84 pounds. Various types of speed adjustment can be applied for local and remote control on the stationary hub assembly. Capacity range is ½ to 25 hp.

If you write maker identify as IEN - 13937

PUMP . . Air operated hydraulic supplies pressure to one or more rams

Source: BEE-LINE COMPANY
Box 569, Davenport, Iowa

Hammer action

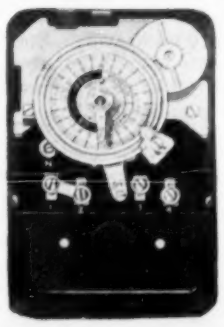
Compressed air from a shop source connects at the top of this new portable pump. The air pressure drives a hydraulic piston, in the pump housing, to deliver hydraulic fluid. Pressure is to 10,000 lb. on 80-lb. air through one or all four of the hose lines that connect near the caster mounted base. The hoses lead to hydraulic rams designed particularly for frame and body straightening in motor vehicle maintenance.

Operating control centers at a pushbutton valve at the top of the pump housing. This valve is opened by hand or foot pressure, the latter when the operator needs both hands to position one of the rams or steady the work. Each hose line is fitted with a manual release valve. There is also a master release and one that opens or closes in the main pressure line.

If you write maker identify as IEN - 13938

TIMING . . Multiple interval unit mounts trippers on a 24-hour dial

Source: INTERNATIONAL REGISTER CO.
2630 W. Washington Blvd., Chicago 12, Ill.



Inter-Matic

Refrigerator defrosting for various time durations, from 5 to 60 min. and at several times during a 24-hr. cycle, is a representative application for this new Series T670 Time Switch timer. Turning ventilating equipment on and off, starting and stopping compressors, intermittent pumping, process timing are additional uses.

Each "on-off" interval is independently controlled and can be set for any duration between the 5 and 60-min. limits. Twelve trippers can be set on the dial at one time. Three are supplied as standard. Operation can be specified on 110 or 220 volts, with 60 cycles standard, at a list price of about $17 and $18.

The assembly employs two sets of contacts for connection as a single-pole single-throw unit with contacts normally closed or normally open. Connection can be made also for single-pole double-throw operation in which one set of contacts opens and the other closes. The silver contacts rate 35 amp. on 110-volt ac. Overall dimensions are about 5 by 3 by 8 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13939

Cut Repeating-process Costs With Time Switch Control

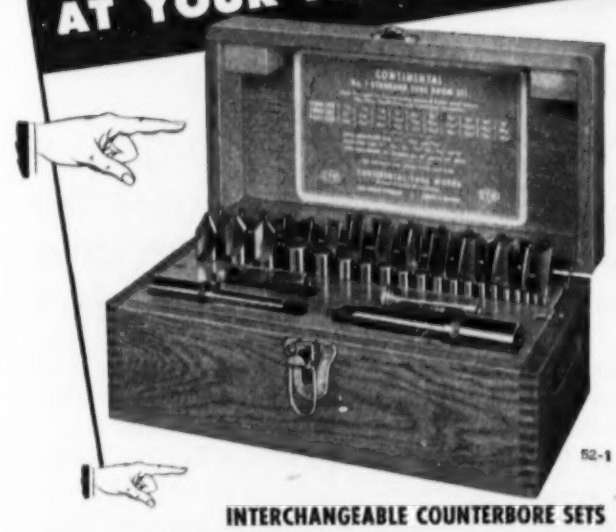
- **TSA-14 timer cuts waste, saves money**
- **Gives accurate, uniform operation**
- **Handles cycles from 10 sec. to 8 hrs.**

Contact your nearest G-E sales office.
General Electric Co., Schenectady, N. Y.
603-134

GENERAL ELECTRIC

If you write maker identify as IEN - 13940

A TOOL BOX AT YOUR FINGERTIPS



INTERCHANGEABLE COUNTERBORE SETS

Continental Interchangeable Counterbore sets give you a wide variety of cutting tools in a compact, convenient form. Three sets are available, for the large or small toolroom. Each set features the famous Continental indestructible drive that will not stick, will not break, and is always hand detachable. Full details are given in Bulletin B 47-37. Send for your copy.

CONTINENTAL TOOL WORKS
Division of Ex-Cell-O Corporation
Detroit 32, Michigan

CTW

If you write maker identify as IEN - 13941

SEE YOUR DISTRIBUTOR OR WRITE FOR LITERATURE AND INFORMATION

WOOD SPECIALTY *Manufacturing Co.*
DIVISION OF GENERAL CEMENT MFG. CO.
909 Taylor Avenue • Rockford, Illinois

If you write maker identify as IEN - 13942

New Truck-loading . . . Batch Type

Despatch

CHEMICAL DRYING OVEN

- For drying chemicals loaded in pans
- Continuous exhaust of recirculated air
- Complete removal of explosive volatile
- Available for gas, electric or steam
- Optional equipment includes loading truck, extra shelves, timed exhaust, special controls and larger capacities

Send for V-39 Bulletin

Wherever there are large batches of chemicals for finish-baking, curing, aging, dehydrating or preheating—the Despatch No. V-39 is the answer. Big pay load capacity. Takes a truck loaded with a dozen or more pans 48" long, 34" wide on 4" centers. Specially arranged horizontal ducts provide a uniform, high volume blast of air over and under each pan for thorough drying. The No. 1 time control exhaust system controls the air intake on the oven so that there is 500 CFM exhaust at 500°F with the air intake wide open, and 150 CFM exhaust at 500°F.—after the time control system has actuated shutting off the air intake. Overall size 68"x8'8".

DESPATCH OVEN CO. Established in 1907

337 Despatch Building
Minneapolis 14, Minnesota

If you write maker identify as IEN - 13943

for velvet-smooth

AIR CYLINDER POWER

use the

BELLOWS HYDRO-CHECK

The Bellows Hydro-Check is an adjustable hydraulic resistance unit used to control the piston rod movement of air cylinders. It smooths out the bounce and springiness of air—takes out piston rod chatter. Can be used with any Bellows Air Motor or conventional air cylinder up to 4½"-5" bore. The Hydro-Check can be used to "check" piston rod movement at any desired point, or at any number of points; it can be used to stop and restart air cylinders at one or more points.

Write today for free copy of Bulletin HC-600R. Address Dept. IEN 1253.

818A

The Bellows Co.
AKRON 9, OHIO

If you write maker identify as IEN - 13944

JOY WL-80 "UNITAIR"

the Compressor of 1000 uses
81 to 640 CFM

- ★ A size for *every* standard motor rating
- ★ Air cooled . . . Two stage
- ★ Force-feed lubrication
- ★ Small floor-space requirements

Write for this FREE HELP!

New 16-page Bulletin A-56—has complete details and a Selector Chart to help you choose the right compressor for your needs.

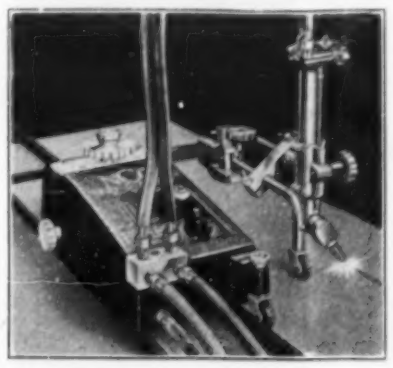
Consult a Joy Engineer W&D 13087

JOY MANUFACTURING CO.
General Offices: Henry W. Oliver Building
Pittsburgh 22, Pa.
IN CANADA: JOY MANUFACTURING CO. (CANADA) LIMITED
GALT, ONTARIO

If you write maker identify as IEN - 13945

CUTTING . . Acetylene torch machine "floats" torch over uneven work surface

Source: NATIONAL CYLINDER GAS CO.
838-42 N. Michigan Ave., Chicago 11, Ill.



For use on steel plate

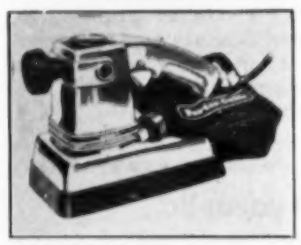
The torch nozzle, in this new "floating" assembly of the Cut-O-Matic portable cutting machine, is kept at the correct distance from the work surface by a supporting wheel and bracket that pivots on the cutting machine arm. The machine itself rides rails placed upon the work. The pivot arrangement permits the torch to follow surface irregularities independently and, at the same time, maintain uniformly accurate square or bevel cut.

The machine can be set up to cut straight lines, circles, arcs, rings, strips and irregular shapes. It applies on steel plate, slabs and pipe. Thickness capacity is to 7 in. with a standard two-hose torch. This can be increased to 16 in. with a special three-hose torch. Operation is on 110-volt dc. or 60-cycle ac. List price is $210.

If you write maker identify as IEN - 13946

SANDING . . Portable machine oscillates pad and picks up dust

Source: PORTER-CABLE MACHINE CO.
30 Exchange St., Syracuse 8, N. Y.



Keeps work surface clean

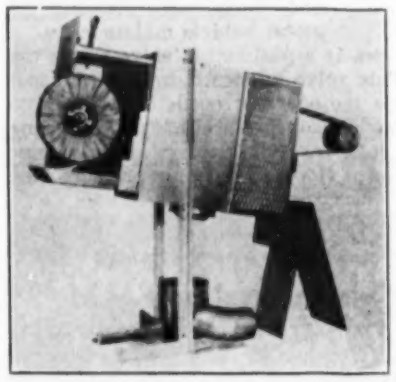
Company announces availability of its Model-27 portable electric oscillating sander, with vacuum dust pick-up similar to that employed in its Model 503 belt type machine, previously described IEN-8145-52. The sanding pad has a ¼-in. orbital movement at 4,000 rpm. It measures 3⅝ by 7⅛ in. to take one-third of a standard sheet of sand paper.

Construction includes a direct connected 110 volt universal motor with trigger switch control, factory lubricated and sealed ball bearings, a die cast polished aluminum housing with a pistol grip and a steel carrying case. The machine measures 9½ by 4¾ by 6½ in., weighs about 6½ pounds.

If you write maker identify as IEN - 13947

DUST COLLECTING . . Air filter hood for grinding and polishing machines

Source: SLONNEGER PRODUCTS CO.
1522-26 Milburn Ave., Dayton 4, Ohio

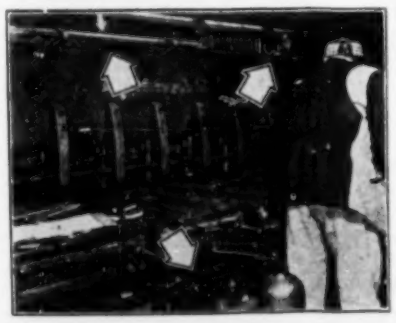


Keeps dirt out of air

Elim-O-Dust is a new filter equipped hood to mount over the wheel or belt on a grinding or polishing machine and to employ air currents set up by the machine to capture dust and flying particles. Shrouds are adjustable at the wheel so the worker can operate at the top or on the side or bottom. The filter section can be removed and the hood connected to an existing exhaust system. Application can be made on grinding wheels to 18 in. in diameter by 9 in. in width. Special units can be assembled to fit given equipment. List price of the standard unit is $150.

If you write maker identify as IEN - 13948

Radiant heat, employing electric fixtures, may be the answer to worker comfort problems at certain of the machines in your plant. The fixtures can be mounted on or beneath or near the machines to focus heat on the operators. It cuts through drafts and supplies the heat exactly where it is needed. Edwin L. Wiegand Co., 7505 Thomas Blvd., Pittsburgh 8, Pa., can show you.



All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13949

Easy-hitch

CLEVIS HOIST HOOK

Here's the hook you've always wished for. A Clevis Hoist hook with a hex head bolt, check nut and cotter. It can be installed or removed in a jiffy. And it's made only by Laughlin.

Available in four safe working load sizes: 1.5 - 2.1 - 3.1 and 5 tons.
Drop forged and heat treated.
Order them from your supply house.

LAUGHLIN
THE THOMAS LAUGHLIN CO.,
121 Fore St., Portland, Me.

If you write maker identify as IEN - 13950

Ten basic sizes with capacities from 30 Mbh to 490 Mbh. Totally enclosed motors.

nyb

UNIT HEATERS

Built to Meet Modern Industrial Requirements

Horizontal Type

Ceiling suspension type with heavy duty, welded steel, fin-and-tube heating element. (Extra heavy non-ferrous coils also available.) Suitable for continuous heating service on steam pressures up to 150 pounds or more.

Bulletin 513

Vertical, Projection Type Also Available

For efficient heating from high-ceiling areas—for door heaters over small openings—or where the horizontal type is not applicable. Ten basic sizes; capacities from 27 to 332 Mbh.

Bulletin 516

IUHA — HEAT WITH UNIT HEATERS

nyb THE NEW YORK BLOWER COMPANY
SALES OFFICES • 3181 SOUTH SHIELDS AVENUE • CHICAGO 16
FACTORY, LAPORTE, INDIANA

If you write maker identify as IEN - 13951

D. O. James Established 1888

Continuous-tooth

HERRINGBONE GEAR SPEED REDUCERS

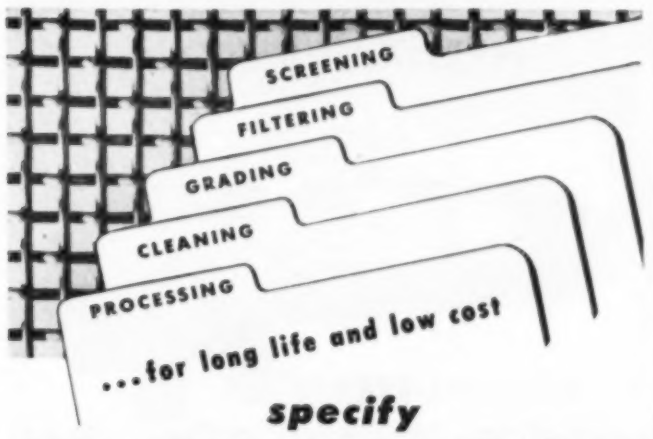
The Gear With the Backbone

The operating efficiency and dependability of these reducers is continuous testimony to their design and inbuilt qualities of manufacture. They are made in single, double and triple reductions—come in many sizes and in a wide ratio and horsepower range.

SEND FOR CATALOG 40-C

D. O. JAMES GEAR MANUFACTURING CO.
1140 WEST MONROE STREET • CHICAGO 7, ILLINOIS

If you write maker identify as IEN - 13952



specify

CAL-WIC MESH CLOTH

You'll find CAL-WIC Mesh Cloth available in a wide variety of weaves, weights and meshes . . . fabricated in various types of metals and alloys for resistance to corrosion, abrasion, or high temperatures.

For original equipment or replacement, investigate the advantage of "precision-made" CAL-WIC Mesh Cloth. Write for further information.

THE COLORADO FUEL AND IRON CORPORATION — Denver and Oakland
WICKWIRE SPENCER STEEL DIVISION — Atlanta • Boston • Buffalo
Chicago • Detroit • New Orleans • New York • Philadelphia

CAL-WIC
INDUSTRIAL SCREENS
THE COLORADO FUEL AND IRON CORPORATION (CFI)

1804

If you write maker identify as IEN - 13953

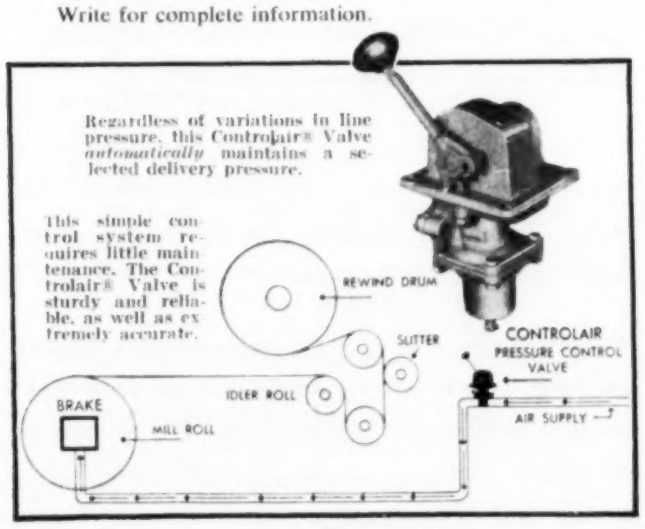
Production increased 50% with Westinghouse Pneumatic Control

● Miro Container Co., of Brooklyn, N. Y., regulates tension on their paper slitter by controlling air pressure to a pneumatic brake on the input roll. The valve formerly used was inaccurate and paper was tearing and interleaving. As a result, production was often delayed.

A Westinghouse Air Brake Co. Controlair® Valve has eliminated this trouble. It is extremely accurate and *automatically* maintains a selected air pressure. With this valve, paper loss has dropped about 10%. And since there now are fewer production delays, about 50% more paper can be slit per day.

You can use a Controlair® Valve wherever you need *variable, controlled* air pressure to operate pneumatic clutches, brakes, cylinders, and actuators . . . by hand lever, foot pedal, or cam.

Write for complete information.



Westinghouse Air Brake COMPANY

INDUSTRIAL PRODUCTS DIVISION WILMERDING, PENNA.
Factory Branch: Emeryville, Calif.
In Canada: Canadian Westinghouse Co. Ltd., Hamilton, Ontario

If you write maker identify as IEN - 13955

CUTTING . . Abrasive machine mounts 5 hp. motor and 20 in. disc

Source: W. F. OBEAR & SON
6073-77 S. Normandie Ave., Los Angeles 44, Calif.

Bulletin 252

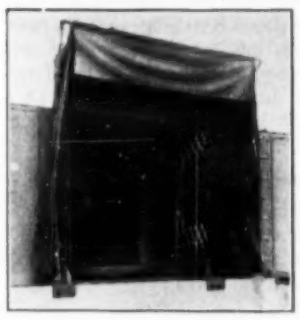
Solids to 2 in. in diameter and tubes or pipe to 6 in. can be cut on this new Mercury abrasive disc machine. It mounts the work in a trough secured to the table, holds it with a chain operated by a foot pedal at the front of the housing. The disc is carried on a ball bearing spindle. The motor, at the rear of the tilting head, is belt connected for spindle speed of 2,350 rpm. The spindle bearings are factory lubricated and sealed.

A second machine in the line, known as the All Angle Mercury, mounts the spindle head on a pivot so it can be turned to a maximum of 45 deg. with the vise. This machine also employs an air operated vise in place of the chain unit on the standard machine. It is driven by a 7½-hp. motor. In both the motor is for 220/440-volt ac.

If you write maker identify as IEN - 13956

PROTECTING . . Dock cover rainproofs between a car and a truck

Source: ATLAS INDUSTRIES INC.
1302 W. Washington St., Chicago 13, Ill.



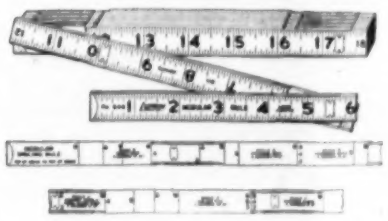
Keeps out the rain

New cover has been designed for loading and unloading between a freight car and a truck where no loading dock is available. Assembly is on a concrete abutment. The unit extends on both sides of the abutment to rainproof the space between the car and the truck. A scissor section extends into the box car where it can be fastened. An outrigger section, on the opposite side, fits around the truck. The unit folds together, out of the way of traffic.

If you write maker identify as IEN - 13957

GAGE . . Folding wood rule carries modular spacing graduations

Source: LUFKIN RULE CO.
1948 Hess Ave., Saginaw, Mich.



In the "red end" line

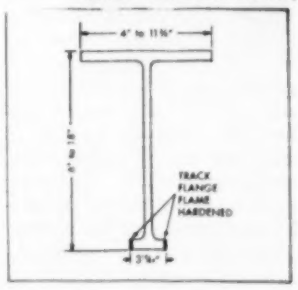
The same number of courses in 16 in., with a specified joint thickness, can be laid for a given size of modular brick with the aid of this new No. 646 folding rule. One side is marked with a 16-in. repeating series of numbers that show the vertical coursing for concrete block, glass brick, facing tile, economy brick, small facing tile, engineered, standard, and Roman brick.

The first section of the rule is 4 in. in length to permit butting it on the first 16-in. module. All other sections are 6 in. in length. The opposite side of the rule is marked in consecutive inches by 16ths on both edges.

If you write maker identify as IEN - 13958

MONORAIL . . Track sections made in 13 sizes of rolled alloy steel

Source: PORKER CORPORATION
2036 Random Road, Cleveland 6, Ohio



Flame cut and hardened

Ohio Beamrail trade names a new alloy steel rolled section for use as straight track and as bridge beams in cranes and transfer bridges in connection with the company's Tramrail equipment. The sections are hot rolled. Then they are flame cut and chilled on the tension flange to produce a file hard rolling surface to a depth of about $\frac{1}{16}$ inch.

Wide compression flange provides good lateral stiffness and stability. A vertical camber, put in each rail section, arches it about 1/600th of the span to minimize the effect of deflection under loaded trolleys. Tables have been prepared by the company showing sections in one-foot increments from 7 to 60 feet.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13959

BARBER COLMAN Impressor

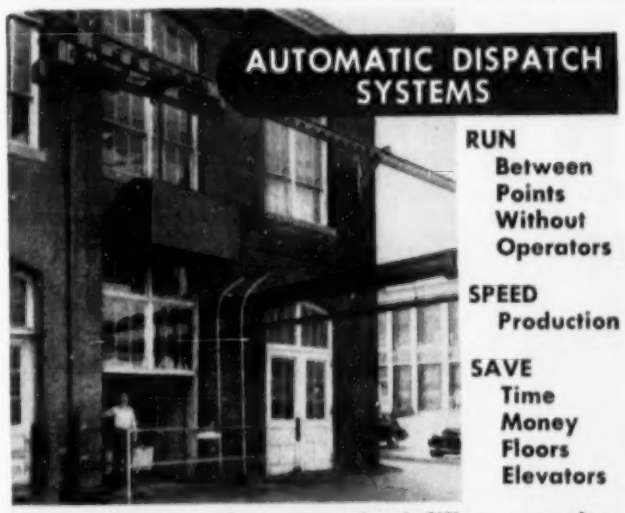
for quick, on-the-spot hardness testing of non-ferrous metals and plastics

Simple to operate . . . gives an instant, dependable measure of hardness. Operates on principle of forcing a spring-loaded indenter into the surface with the amount of penetration registering on a dial indicator. Can be used in any position . . . tamperproof . . . compact . . . rugged, yet weighs only 12 oz. Thousands used by industry.

Write today for complete details.

BARBER-COLMAN COMPANY, Dept. L, 1216 Rock St., ROCKFORD, Illinois

If you write maker identify as IEN - 13960



Press a button and up goes a load. When it reaches top position, the overhead carrier starts on its way to next room or building other side of street. Back and forth it travels automatically, carrying materials without operator accompanying. Many types of automatic Tramrail systems are cutting costs drastically and smoothening production flow.

AUTOMATIC DISPATCH SYSTEMS

Write for this free booklet.

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
4240 East 285th St., Wickliffe, Ohio

CLEVELAND TRAMRAIL

If you write maker identify as IEN - 13961

THIS BOOK TELLS YOU HOW TO SAVE MONEY

—repointing dipper teeth
—rebuilding and hardfacing worn grousers
—welding manganese steel
plus many unique applications for manganese steel flats, rounds, squares and plate.

AND IT'S FREE!

AMSCO
415 E. 14th Street
Chicago Heights, Illinois
Please send me the book on Amsco Manganese Steel Weldments—WA-77

Name _____
Address _____
City _____ State _____

AMERICAN Brake Shoe COMPANY — American Manganese Steel Division
415 EAST 14th STREET • CHICAGO HEIGHTS, ILL.

If you write maker identify as IEN - 13962

WHAT'S NEW AT BRISTOL

Meet the world's simplest instrument system!

TRUE PLUG-IN SERVICE—results in great savings in installation costs; units can be plugged in or out without stopping process or control.

It's Bristol's new METAGRAPHIC pneumatic transmission instrument system for measuring, indicating, recording and controlling pressure, temperature, vacuum, flow, differential pressure and liquid level.

Here are the big advantages:

SIMPLICITY—fewer parts, fewer adjustments, and less service required. Ranges can be changed in seconds.

FLEXIBILITY—units can be combined like building blocks to make any kind of arrangement.

Get the whole METAGRAPHIC story by writing to The Bristol Company, 107 Bristol Road, Waterbury 20, Conn.

BRISTOL *THE DEPENDABLE GUIDEPOST OF INDUSTRY*

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

If you write maker identify as IEN - 13963

Act now—have a money-saving

B.F.Goodrich

TW TIRE AND WHEEL ANALYSIS made in your plant today!

● You can save as much as 50% on industrial tire costs with the B. F. Goodrich Tire and Wheel Analysis Plan!

Call in your local B. F. Goodrich representative today. He's trained to study your materials handling set-up. He knows the kind of industrial tires—the tread compounds and tread designs—that will give the best service at lowest cost in your type of work. He'll recommend these tires to you. And this service costs you nothing, puts you under no obligation.

Industrial tire users across the country have benefited from the recommendations of the B. F. Goodrich Tire and Wheel Analysis man. They have saved up to 20% on *maintenance costs alone* by following the suggestions he makes. Why not find out, without obligation, how much the B. F. Goodrich Tire and Wheel Analysis Plan can save *you!*

You can be sure the advice you get from your BFG man will be impartial. He has no axe to grind for any particular type of industrial tire—for B. F. Goodrich makes, and BFG retailers sell, a complete line of industrial tires.

Call your local B. F. Goodrich representative today and ask him to make a free Tire and Wheel Analysis in your plant, or mail the coupon. A special TW Analysis Plan is available for manufacturers of industrial handling equipment.

Specify B. F. Goodrich tires when ordering new equipment

The B. F. Goodrich Co.
Department TW-330, Akron 18, Ohio.

Please send me:

☐ *Additional information* on your new Tire and Wheel Analysis Plan

☐ A free copy of your "Industrial Tire Guidebook".

Name _____

Company _____

City _____ Zone ____ State ____

NEW LITERATURE

Brief reviews to advise you of available new information published by the manufacturers covering products they offer for your use. Each includes identification, size of the material, information it contains so you can judge its value to you.

Identify as IEN - 0907

AWARDS . . Stock plaques for safety contests provide space for engraving names or other information. List prices are given on these and stock safety-committee, fire-brigade and other badges in 4-page catalog, "Stock Plaques". Williams Jewelry & Mfg. Co., 8-12 S. Wabash Ave., Chicago 3, Ill.

Identify as IEN - 0908

BEARINGS . . Nine types of sleeve bearings are supplied by the company. They range from cast bronze to aluminum-on-steel. Summary on types and sizes in 4-page folder, "Which Sleeve Bearing Would You Choose". Johnson Bronze Co., 712-16 S. Mill St., New Castle, Pa.

Identify as IEN - 0909

BENDING . . Tonnage chart for press brake operations lists rating required by metal thickness and width of female die opening. It forms part of new 8-page catalog, letterhead request please, on typical forming dies. Rafter Machine Co., 257-61 Stephens St., Belleville 9, N. J.

Identify as IEN - 0910

BOXES . . Deep-drawn aluminum boxes to use as housings for electronic, aircraft and electrical equipment. Catalog 4, 20 pages, lists some 750 standard sizes with dimensions. Zero Mfg. Co., 1119-23 Chestnut St., Burbank, Calif.

Identify as IEN - 0911

BUILDINGS . . Corrugated steel sheet with porcelain-enamel finish is employed for industrial roofing and siding. Installation instructions and detail drawings in 8-page bulletin, "V-Corr." Toledo Porcelain Enamel Products Co., 2273-77 Smead Ave., Toledo 6, Ohio

Identify as IEN - 0912

CASTERS . . 80-page Catalog 157 on truck casters groups them by type of service, includes a selection guide by specific use. Please use your letterhead. Faultless Caster Corp., 1519-23 N. Garvin St., Dept. AM, Evansville 7, Ind.

Identify as IEN - 0913

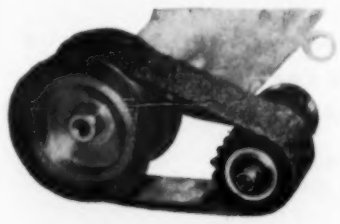
CASTINGS . . Shell molding process is employed for metal castings made to your specifications. They feature dimensional accuracy, finished appearance, sharp surface definition, good machinability. Bulletin 100-K12, 4 pages. B-I-F Industries Inc., 384 Harris Ave., Providence 1, R. I.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13965

A PAID NEWS ADVERTISEMENT BY CARBORUNDUM CO.

PORTABLE BELT GRINDERS slash costs on welds, contours, small-radius finishing



Users of the "61" PORT-A-BELT Grinding Attachments and Abrasive Belts by CARBORUNDUM report savings on many grinding and finishing jobs—as high as 50% on production costs, and up to 60% and more in production time. Weld reducing, grinding concave and convex contours, cleaning and polishing small-radius die mold areas are just a few of the many applications. Surfaces normally difficult to reach with portable equipment are easily ground with one of the four sturdy PORT-A-BELT Attachments. 4x2" and 2x1" contact wheels are available, mounted either on the tool spindle or on the extended arm of the attachment. The "61" serrated rubber contact wheel, used with CARBORUNDUM® Brand Abrasive Belts, provides smooth, fast, cool cutting action without bounce or chatter. Belts last up to twice as long, too, because loading is reduced to a minimum.

All four models fit nearly every standard straight-spindle air or electric grinder. Built to take more than normal shop abuse . . . nothing to get out of order. Belts snap on and off in a jiffy.

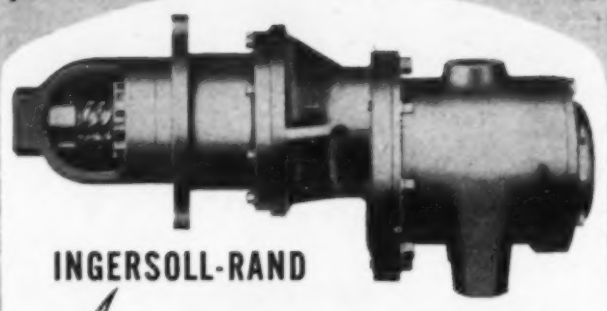
There are three easy ways to find out what PORT-A-BELT Grinding Attachments can do for you: call your CARBORUNDUM Distributor or Salesman, listed in the yellow pages under "Abrasives," write to Dept. IEN 82-326, **The Carborundum Company,** Niagara Falls, N. Y., or use the handy inquiry form provided by this publication.

"Carborundum" and "Port-A-Belt" are trademarks of The Carborundum Company, Niagara Falls, New York

82-326

If you write maker identify as IEN - 13966

NO BATTERIES TO WORRY ABOUT!



INGERSOLL-RAND

Air STARTING MOTORS give you trouble-free engine starts

RELIABLE—I-R Air Starting Motors are built for fast, sure engine starting—anywhere.

LOW COST—No batteries, generators or electrical parts to buy. Practically no maintenance expense.

COMPACT—I-R Air Starting Motors are lightweight, small but powerful. For all popular gasoline and diesel engine sizes. Easily installed.

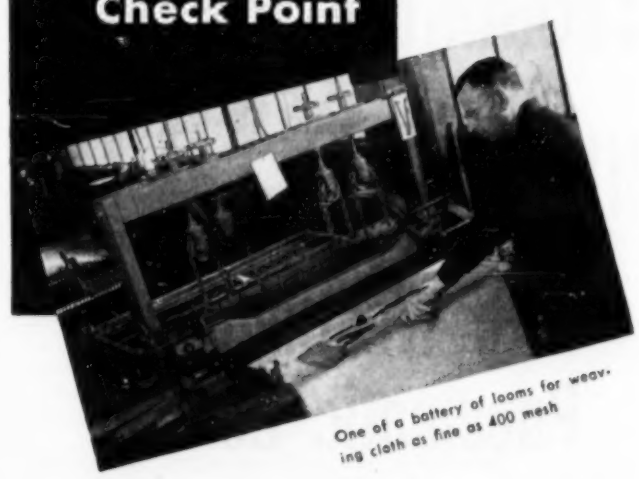
Ask your engine distributor to show you the I-R Air Starting Motor line. Or write for Bulletin 5094A.

867-18A

INGERSOLL-RAND
11 Broadway, New York 4, N.Y.

If you write maker identify as IEN - 13967

An Important Wire Cloth Check Point



One of a battery of looms for weaving cloth as fine as 400 mesh

Weaving Precision

Our skilled workmen and precision looms combine to make precision wire cloth that meets the most rigid specifications. All shute wires are parallel and all warp wires are parallel as they must be, to assure a uniformly woven cloth with no defects. One or two open spots in a wire cloth could completely spoil the most painstaking screening operation.

In addition to its uniformity and freedom from imperfections, Newark Wire Cloth is noted for accurate mesh counts. Available in all the commercially used metals, Newark Wire Cloth is woven in sizes ranging from 4 inches (space cloth) down to 400 mesh.

We maintain a large stock of the commonly used metals and sizes, and are in a position to make prompt shipments. Let us quote on your requirements. When writing, please give us details on your process.

Send for our New Catalog E.

NEWARK for ACCURACY

Newark Wire Cloth COMPANY

351 VERONA AVENUE • NEWARK 4, NEW JERSEY

If you write maker identify as IEN - 13969

WRITE YOUR OWN TICKET FOR

Quality Wire!

SPECIFY SENECA FOR WIDE RANGE OF USES

- Aircraft
- Armature
- Cable
- Car Seal
- Cotter Pin
- Curtain Spring
- Flexible Shaft
- Glass Netting
- Hair Pin
- Lock Spring
- Piston Ring
- Plow Steel
- Ring Traveler
- Rope
- Spark Coil Core
- Spring
- Stapling
- Stitching
- Weaving

Whatever your needs in wire . . . specify SENECA for *top quality* and *uniformity!* High or low carbon steel wire . . . aluminum . . . bronze. Sizes No. 40 W & M (.007) and larger . . . round, half round, oval, square, flat, straightened and cut. Finishes—bright, soft annealed, coppered, liquor, tinned, bright galvanized, oil tempered, enameled. Write about your requirements.

SENECA WIRE & MANUFACTURING COMPANY, FOSTORIA, OHIO

Representatives in practically All Principal Cities

If you write maker identify as IEN - 13970

The Tough Jobs go to

Graham

variable speed drives

most for the money

because . . .

- **ULTIMATE in SIMPLICITY and COMPACTNESS** — only the Graham is a straight line extension of a standard induction motor — or available without motor.
- **UNLIMITED SPEED RANGE** — from any desired maximum speed to zero, including reverse if wanted without stopping motor.
- **UNMATCHED ACCURACY** — of speed setting and resetting and speed holding.
- **NO PERISHABLE PARTS** — such as belts or tubes, requiring periodic replacement.
- **PROVED PERFORMANCE** — Fifteen years satisfactory use as standard equipment.
- **LOW COST** — a better job for less money.

Prompt Delivery on Standard Models

GRAHAM TRANSMISSIONS, INC.
Dept. IEN, Menomonee Falls, Wis.

GET Graham most reliable variable speed drive made

ENGINEERED and RATED for 'ROUND the CLOCK SERVICE

NEW LITERATURE—Continued

Identify as IEN - 0914

CHAIN DRIVES . . Roller chain and sprockets with split-taper mounting bushings. Stock sizes and list prices in 12-page Catalog CD-101-B which also covers attachments. Browning Mfg. Co., 16 Chester St., Maysville, Ky.

Identify as IEN - 0915

CHUCKS . . Scroll-type unit grips work in standard manner, has an adjustment to line it up true, holds its setting on duplicate runs to .0005 in., comes in two to six-jaw models with opening to 2½ inches. Catalog 53, 8 pages. Buck Tool Co., 2013-17 Schippers Lane, Kalamazoo, Mich.

Identify as IEN - 0916

CHUCKS . . Collets for lathe and milling-machine use are listed by capacity and major dimensions with prices in 4-page Collet Catalog. A cross-reference table lists collet number by make and size of machine. Step chucks are listed. Elgin Tool Works Inc., 1768-72 Berteau Ave., Chicago 13, Ill.

Identify as IEN - 0917

CLAMPS . . Standard components for jigs and fixtures are shown by full-scale drawings in 28-page "Details" catalog. They include rest buttons, fixture keys, screws, hand knobs, crank handles, alloy steel studs. Harco Engineering, 12090-94 Woodbine Ave., Detroit 28, Mich.

Identify as IEN - 0918

COMMUNICATING . . Two-way radio for power trucks in a plant enables you in effect to put a foreman on each truck. What it will do is in 6-page Folder ECR-106, "How to Modernize Your Material Handling Operations". General Electric Co., 1949 Electronics Park, Syracuse 1, N. Y.

Identify as IEN - 0919

CONSTRUCTION . . Electric vibrator mounts on a tractor, compacts crushed stone and gravel at 60 fpm. One pass will compact 12 in. of rock to support smooth rollers. Folder, 4 pages. Jackson Vibrators, 10 Jackson Ave., Ludington, Mich.

Identify as IEN - 0920

TEMPERATURE CONTROL . . Weather-Flo regulator controls temperature of a building in accordance with outside temperature. It works with oil, gas, coal and hot-water or warm-air heat. Folders E, F and H, 4 pages each. Automatic Devices Co., 953 Automatic Ave., Western Springs, Ill.

Identify as IEN - 0921

TEMPERATURE CONTROLS . . For heating, ventilating and air conditioning employ an electronic amplifier for close regulation. Catalog F-6166, 8 pages, tells how. Barber-Colman Co., 1312-16 Rock St., Rockford, Ill.

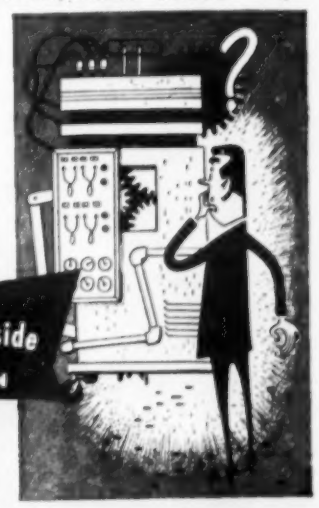
Identify as IEN - 0922

FLOW CONTROL . . Force-balance pneumatic flow control for process fluids mounts direct on the regulating valve, combines proportional, reset and derivative actions. Operation and associated equipment in 8-page Bulletin 470. Foxboro Co., 42 Neponset Ave., Foxboro, Mass.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13972

The freezer's automatic
The stove and TV too
The washer shuts itself off
Then starts itself anew
The car's a
Mushomatic Eight
Remote controlled by knee
And who's in charge of
all this stuff?
Unautomatic me!



CASTINGS on the lighter side by WELLMAN

If weight is a factor in the product *you're* in charge of purchasing, engineering or manufacturing, turn *automatically* to WELLMAN.

We've been in charge of producing castings on the lighter side, aluminum and magnesium, for almost half a century.

Catalog No. 53 will fill you in on the details.

Well-Cast MAGNESIUM AND ALUMINUM CASTINGS
Well-Made WOOD AND METAL PATTERNS

THE WELLMAN BRONZE & ALUMINUM CO.
Dept. 9, 12800 Shaker Boulevard Cleveland 20, Ohio

If you write maker identify as IEN - 13973

NEW

better way of detecting gas or vapor flow

Bulletin describes operating principle of Fenwal DETECT-A-FLO

If detection of change of air flow, gas, or vapor past a given point is important to you, then you will want to know more about the new Fenwal DETECT-A-FLO unit.

The device contains a constant heat source and operates on a heat transfer principle. The electrical contacts of a basic Fenwal THERMOSWITCH® element are actuated whenever there is a change in the rate of flow beyond the set point. Easy to install, ambient compensated, hermetically sealed, compact, resistant to vibration and corrosion — has no exposed moving parts.

The newly developed Fenwal DETECT-A-FLO will bring improved dependability in applications where detection or control of flow is vital. Can be used in tandem to meter flow as well. Comprehensive engineering data is ready now. For more information, send now for your free copy of bulletin. Write **Fenwal Incorporated, 712 Pleasant Street, Ashland, Mass.**

Fenwal DETECT-A-FLO

Electric Temperature Control and Detection Devices

If you write maker identify as IEN - 13974

Simpson Model 260

VOLT-OHM-MILLIAMMETER

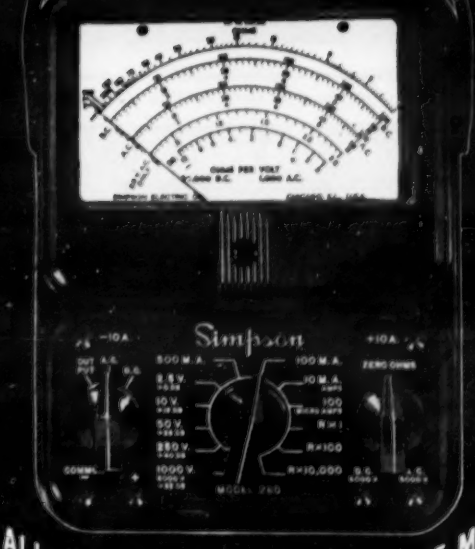
$38.95 Dealer's net.

USE IT FOR:

- TV SETS
- RADIOS
- TRANSMITTERS
- BROADCASTING EQUIPMENT
- HOME APPLIANCES
- TWO-WAY RADIO COMMUNICATIONS SYSTEMS
- PHONE LINES
- AIR CONDITIONING SYSTEMS
- STARTER CONTROLS
- AUTO IGNITIONS, GENERATORS, BATTERIES
- MOVIE EQUIPMENT
- PANEL INSTRUMENTS
- TV CAMERAS
- AUTO LIGHTING SYSTEMS
- GENERATORS
- VOLTAGE SOURCES
- "HAM" RADIO EQUIPMENT
- CABLES
- CONNECTORS
- AUDIO FREQUENCY SOUND CURRENTS

. . and write for your complimentary copy of "1001 Uses for the Simpson Model 260" 50 pages of uses.

BEST ALL-AROUND TESTER ON THE MARKET



BEST ALL-AROUND TESTER ON THE MARKET

RANGES:
20,000 OHMS PER VOLT DC
1,000 OHMS PER VOLT AC
VOLTS, AC AND DC: 2.5, 10, 50, 250, 1,000, 5,000
OUTPUT: 2.5, 10, 50, 250, 1,000
MILLIAMPERES, DC: 10, 100, 500
MICROAMPERES, DC: 100
AMPERES, DC: 10
DECIBELS (5 RANGES): −12 TO +55 DB
OHMS: 0-2000 (12 OHMS CENTER); 0-200,000 (1,200 OHMS CENTER); 0-20 MEGOHMS (120,000 OHMS CENTER)

SIMPSON ELECTRIC COMPANY
5200 W. Kinzie St., Chicago 44 · EStebrook 9-1121
In Canada: Bach-Simpson, Ltd., London, Ont.

If you write maker identify as IEN - 13976

BRUNING ELECTRIC ERASER

Saves hours of work... Protects valuable drawings

ERASER CAN'T FLY OUT . . . valuable drawings are safe with a BRUNING Electric Eraser. Exclusive *7-inch* eraser feeds through hollow shaft — can't fly out and let ferrule gouge paper.

SAVES TIME . . . adds extra hours of working time by eliminating tiresome, finger-cramping manual erasing.

RUNS COOL AND QUIET . . . permanently lubricated bearings mean no overheating in steady operation, are mounted in rubber for vibration-free performance. Only one moving part.

EASY TO USE . . . lightweight aluminum housing fits fingers like a pencil. Eraser is extended or replaced in seconds.

Phone or write Bruning — there's an office near you—for more facts and figures on how to save time and tempers with Bruning Electric Eraser. CHARLES BRUNING COMPANY, Dept. R123, 4700 Montrose Avenue, Chicago 41, Illinois. A-3-3

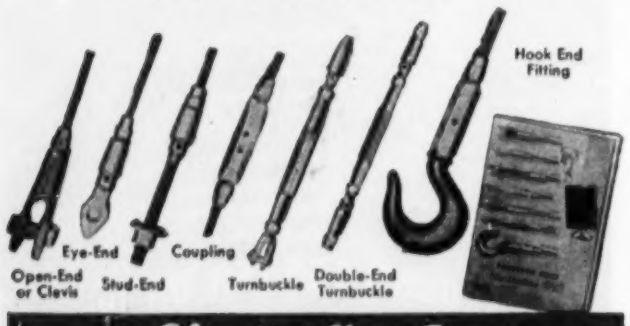
BRUNING
Everything for the Engineer and Draftsman

If you write maker identify as IEN - 13977

Cut out needless re-roping costs

USE ELECTROLINE WIRE ROPE FITTINGS

In minutes, ordinary labor can install Electroline fittings that will hang on for all time. Prolong wire rope life by damping vibration stresses thus eliminating wire rope fatigue at the fitting. Write for Electroline Catalog. It points out many savings—no cost.



Electroline Company
4121 SOUTH LA SALLE STREET
CHICAGO 9, ILLINOIS
IN CANADA: POWERLITE DEVICES, LTD., TORONTO

If you write maker identify as IEN - 13978

NEW SBS WATERLESS WASHSTATION*

"brings the washroom to the worker"*
for only $52.50 per unit
(F.O.B. Saginaw, Mich.
Towel Dispensers not included)

SBS Waterless Washstations are complete units for hand washing on the job. Because they dispense SBS-30 Waterless Skin Cleanser, these Washstations require no plumbing . . . SBS-30 is simply rubbed on the hands and wiped off along with all the soil.

SBS Waterless Washstations —

- **In Trouble Spots** — Avoids workers use of irritating, harmful solvents. Quickly and safely removes tars, greases, paints, varnishes and other hard-to-remove soils.
- **On the Production Line** — Cuts to a minimum costly interruptions for hand washing.
- **Actually Earn You Money** — By eliminating one unnecessary trip per day for hand washing by only 10 men, you can save up to $720 annually.

Fill out and mail the coupon below for complete information about SBS Waterless Washstations and our 30-day no-risk money back trial offer.

*Trademark

92-A

SUGAR BEET PRODUCTS CO., Dept. 7E, SAGINAW, MICHIGAN
Sirs: Please send me full information about the new SBS Waterless Washstation and your 30 day no-risk money back trial offer.
NAME
TITLE
COMPANY
CITY ZONE STATE

SUGAR BEET PRODUCTS CO. • Saginaw, Mich.
Chemical By-Products Division

NEW LITERATURE—Continued

Identify as IEN - 0923

PNEUMATIC CONVEYOR . . Dry pulverized material is handled between storage, shipping or process by the Fuller-Kinyon conveyor. Typical products are cement, fly ash, pulverized coal, limestone dust. Its use is described in 16-page Bulletin FK-26. Fuller Co., 1053 Fuller Bldg., Catasauqua, Pa.

Identify as IEN - 0924

CONVEYOR BUCKETS . . Cast elevator buckets have rounded corners and smooth surfaces to promote discharge. They come in six styles for belt or chain attachment. Book 2465, 12 pages. Link-Belt Co., 305-9 N. Michigan, Chicago 1, Ill.

Identify as IEN - 0925

OVERHEAD CONVEYOR . . Hand-pushed trolleys for overhead manual conveyor track rate 500 to 2,000 lb., will not bind on curves. Available models, together with cranes, stub switches, track fittings, in 20-page Bulletin 453. Jervis B. Webb Co., 8915 Alpine Ave., Detroit 4, Mich.

Identify as IEN - 0926

CUTTING TOOLS . . 92-page Catalog 54 describes carbide-tipped milling cutters, reamers, drills, lathe tools, centers, counterbores, masonry drills, glass drills, together with instructions for use and suggestions on sharpening. Super Tool Co., 21652 Hoover Road, Detroit 13, Mich.

Identify as IEN - 0927

DOORS . . Overhead rolling design is supplied in stock sizes from 8 by 7 ft. to 12 by 12 feet. Operation is by hand or power. Installation details in 12-page Bulletin 80. Kinnear Mfg. Co., 4002 Fields Ave., Columbus 16, Ohio

Identify as IEN - 0928

DRILLING MACHINE . . Sensitive variable-speed unit drills holes from .004 to $\frac{13}{16}$ in. in production service. You may be interested in some of the adaptations of the standard machine for special work. Bulletin V-53, 4 pages. Hamilton Tool Co., 905 Hanover St., Hamilton, Ohio

Identify as IEN - 0929

DUST COLLECTING . . Self-contained units collect and remove dust from polishing, grinding, woodworking operations. They come in cabinet cloth filter and cyclone separator types, described with exhausters and accessories in 16-page Catalog 37. Torit Mfg. Co., 286 Walnut St., St. Paul 2, Minn.

Identify as IEN - 0930

FABRICATING . . Large 48-page "Picture Story" book shows what the company makes in welded steel, structural steel, steel building panels, rolling doors, roofs. R. C. Mahon Co., P. O. Box 4666-A, Detroit 34, Mich.

Identify as IEN - 0931

FASTENINGS . . Structural latches, originally for aircraft cowling and access panels, are available for industrial use to take loads to 7,500 pounds. Full-scale drawings in 20-sheet Design Portfolio AD-339. Simmonds Aerocessories Inc., 103-7 White Plains Road, Tarrytown, N. Y.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13979

Even where clearances are small, oil seal replacements are no problem with easy-to-install split-type Clipper Seals.

All you do is: (1) Hook the self-adjusting garter spring around shaft. (2) Spread the seal at the split and slide it over shaft. (3) Slip the garter spring inside its groove in the seal and press assembly into cavity.

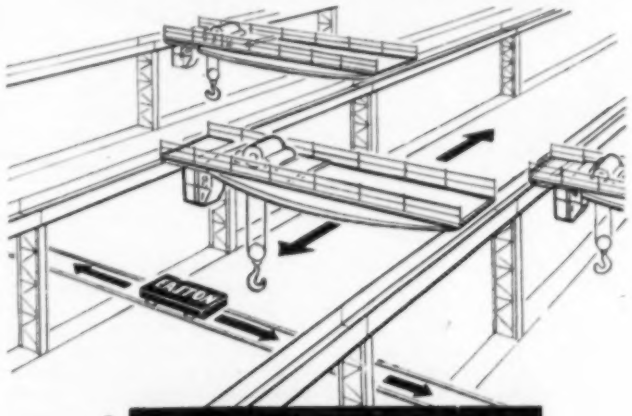
Precision molded Clipper Seals are made for sealing against oil, grease, water, air, grit and coolants . . . are available for shafts up to 66" in diameter. Write for Catalog PK-46A. Address: Johns-Manville, Box 60, New York 16, N. Y.

Johns-Manville CLIPPER SEALS

If you write maker identify as IEN - 13980

Cross-Bay Transfer

Automatic motor driven transfer cars provide a universal handling system in modern parallel bay plants now served by overhead cranes. Also for transfer between plant buildings.



A-1040

EASTON

EASTON CAR & CONSTRUCTION CO. • EASTON, PA.

If you write maker identify as IEN - 13981

For versatility unlimited—

it's the K series

Rugged construction and the wide range of sizes, shell designs, and contact arrangements in the Cannon Electric K and RK Series are responsible for their wide use throughout aircraft, radio, and the electronic industries. Eight basic shell designs and over 190 different contact arrangements are available. In addition, some K types are especially designed for hermetic sealing, pressurization and for aircraft firewall applications, utilizing Acme threaded quick-disconnect coupling nuts. Current ratings to 200 a maximum. Maximum flashover value 4,300 v ac. Many accessories, including integral clamps and dummy receptacles are available.

For engineering data, write for K Bulletin. For a general survey of entire Cannon line, request Cannon Plug Guide.

CANNON ELECTRIC
Since 1915

CANNON ELECTRIC COMPANY, LOS ANGELES 31, CALIFORNIA
Factories in Los Angeles, Toronto, New Haven. Representatives in principal cities.
Address inquiries to Cannon Electric Co., Dept. K-112, Los Angeles 31, Calif.

If you write maker identify as IEN - 13982

Photo Courtesy MEYCO SCOREBOARD CO.

GUARDIAN STEPPING RELAYS tell the score!

At the touch of a button, the special Guardian Stepper (illustrated) lites up changing scores, downs, yards to go and the quarter being played. Guardian Stepper Applications also include control of animated signs and displays—intricate timing devices—automatic elevators—automatic business machines—automatic circuit selections from a pulsing dial—automatic wave changing on short wave transmitters—plus an endless variety of "special" operations. Send b/p for cost free recommendations.

GUARDIAN SPECIAL STEPPER

GUARDIAN ELECTRIC
1620-P W. WALNUT STREET CHICAGO 12, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

If you write maker identify as IEN - 13983

AMEs

...the preferred Dial Indicators

One of America's largest and most famous mass-producers recently chose Ames as preferred source of supply for indicator gauges. They did because the four sizes of Ames "Hundred Series" indicators fit every measuring requirement; they are *accurate, sensitive,* low in friction, yet are *rugged* and *tough* — give *more* on-the-job time. All Ames products embody latest design and highest-quality materials; they are manufactured by methods and machines that are *exclusive* with B. C. Ames Co.

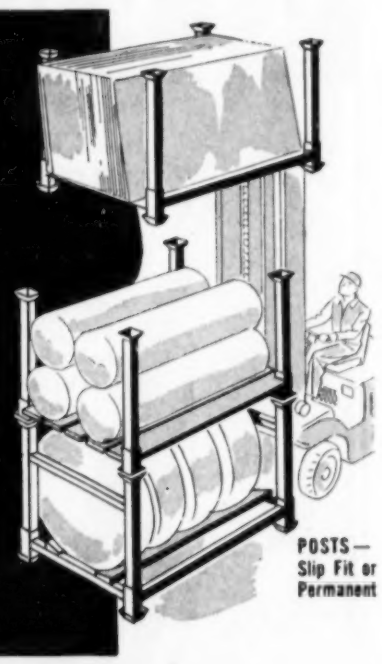
Send today for your free copy of Catalog No. 58

Representatives in principal cities. B. C. AMES CO. *33 Ames Street Waltham 54, Mass.*

Mfgr. of Micrometer Dial Gauges • Micrometer Dial Indicators

If you write maker identify as IEN - 13984

75% more storage in many areas using



Paltier

"TIERS OF RACKS"

PYRAMID RACKS

PATENTED

SAVE SPACE . . . and YOU SAVE DOLLARS!

PALTIER PYRAMID RACKS are storing as much as 75% and more crushable, bulky and irregular shaped items in the same storage area — in industry after industry. They save their cost in no time at all.

A Paltier User Says:

"We are now able, in one operation, to load and unload various colors or styles of asphalt or asbestos shingles while under previous systems it sometimes required movement of five to eight stacks of material to obtain the pallet where the correct item was stacked"

— a real time saver!

Ask Us!

A Paltier storage engineer will be glad to show you how you can save storage space, too, with the Flexible Paltier System. Ask us, without obligation.

Write for 16-page Catalog

THE PALTIER CORPORATION 1711 KENTUCKY ST. MICHIGAN CITY, IND.

If you write maker identify as IEN - 13986

HEAT TREATING . . Gas furnace advances small work on shaker hearth

Source: WESTINGHOUSE ELECTRIC CORP. 511 Wood St., Dept. IEN, Pittsburgh 30, Pa.

For non-rolling work

Work pieces are loaded on the extended hearth of this new furnace at one end of the assembly. Reciprocating motion of the hearth conveys the work through the heating chamber. The pieces fall off the discharge end into a quenching fluid. They are conveyed from the quench tank on a wire mesh belt for discharge into tote boxes. The reciprocating mechanism is mounted on a separate stand so the furnace receives none of the vibrating action.

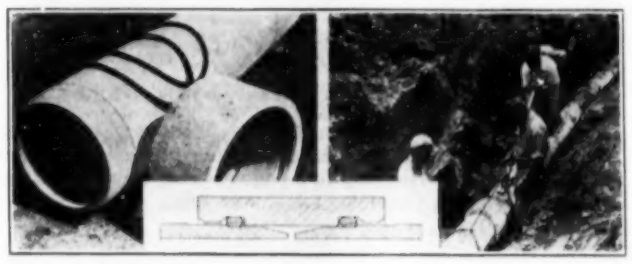
The furnace is a radiant tube gas fired assembly for temperature to 1,700 deg. F. to heat treat medium carbon, high carbon and alloy steels. An Endogas atmosphere is provided so the action is not accompanied by scaling or decarburization. Production, at 1,600 deg. F., is 400 to 600 lb. per hour.

Work speed through the furnace is adjusted by varying the vibrating or oscillating frequency of the hearth. Charge space of the hardening zone measures 84 by 30 by 3 inches. The radiant heating tubes are installed over and under the hearth with control from one side of the structure. Electric heat can be specified in the place of gas.

If you write maker identify as IEN - 13987

PIPE FITTING . . O-ring coupling slides into position on Transite pipe

Source: JOHNS-MANVILLE 22 E. 40th St., Dept. IEN, New York 16, N. Y.



Permits angular deflection

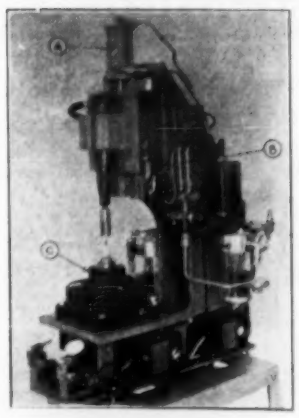
Ring-Tite is a new asbestos-cement sleeve with two circular recesses that take rubber sealing rings. The sleeve applies over machined ends of Transite pipe until the rings ride against shoulders on the pipe. At this point, the sleeve couples the two pipe ends together in leak proof assembly with provision for expansion and contraction.

The coupling can be assembled on one end of a pipe length and then this length, with the coupling in place, can be lowered into a trench to be joined into the end of a run of pipe. A pulling tool is available for this purpose. Tapers on the pipe ends provide for entrance into the O-rings. The company supplies a lubricant to apply on the pipe.

If you write maker identify as IEN - 13988

NUT SETTING . . Special machine tightens the lock nut on a spark plug

Source: MEAD SPECIALTIES CO. 4112-16 N. Knox Ave., Dept. LS-38, Chicago 41, Ill.



Three second cycle

Illustrated is new assembly of various units in the company's line of pneumatic equipment with various electric and pneumatic accessories to perform a special operation. The machine is typical of designs the company is prepared to work out using its standardized components.

A spark plug is secured in the air operated collet on the machine base and one of two micro switches at the front of the assembly is depressed momentarily to actuate a solenoid valve. This valve applies air in the cylinder at the top of the machine to bring the slide down and, with it, the pneumatic nut setter.

Downward movement operates a cam on the side of the slide to actuate another micro switch that supplies air to the setter and starts a timer. The timer reverses the driving action at the proper moment to free the setter and permit its upward movement when the second of the two micro switches at the front of the machine is depressed.

The assembly is based on the company's No. 183 air press stand. Detail, illustrated information is available on request in the new Air Power Catalog.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13989

NYLINED* BEARINGS

...with Smooth, Tough, Du Pont NYLON

Solve Many Bearing Problems

- Resiliency resists poundout
- Permit dry operation
- Minimize abrasion failures
- Silent operation
- Lower friction
- Superior corrosion resistance
- Damp mechanical vibration
- Eliminate friction oxidation
- Operate in liquids
- Close fits
- Non-contaminating
- Extremely compact
- Light weight
- Low cost
- Longer life
- Less maintenance
- Bearing surface instantly replaceable

* For further information and the name of your local representative, write

THOMSON INDUSTRIES, Inc.

Dept. 8
Manhasset, New York

Also Manufacturers of BALL BUSHINGS . . . the Ball Bearing for Linear Motions

If you write maker identify as IEN - 13990

IMMEDIATE SHIPMENT ON

UNIVERSAL STEELFLEX METAL TUBING

UNIVERSAL METAL HOSE CO.

2131 South Kedzie Avenue Chicago 23, Illinois

If you write maker identify as IEN - 13991

SHIPPING COSTS GO DOWN

CORROSION LOSSES STOP

WITH MARVELLUM VPI® WRAP

• Time consuming slushing, expensive wraps and seals, messy and costly cleaning are no longer necessary if you use Marvellum VPI. Developed for Government shipments during the war, VPI is now available to all. It's the ideal wrap for shipping Ferrous metal parts. A special coating on the paper vaporizes and forms an invisible protective film around the item wrapped, preventing corrosion.

It is easy to use — just fold the paper over the part. Tight seals, rust-preventive oils, puncture-proof wrappings or direct contact with the chemical are not necessary. Yet Marvellum VPI protects against rust for years. Open the wrapping and there's the part as bright and clean as when it was made.

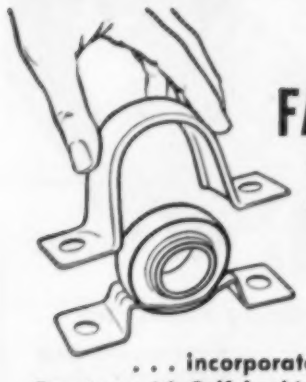
Marvellum VPI is available in sheets, envelopes or special containers. Marvellum has complete facilities under one roof for designing, coating and producing VPI Wraps. Also makers of a wide range of other Barrier Materials, Government Approved, for product protection.

Write for FREE Booklet and name of nearest distributor.

The **Marvellum Company**
20 APPLETON STREET HOLYOKE, MASS.
First and Foremost in VPI Protection

If you write maker identify as IEN - 13992

NEW! LOW-COST PILLOW BLOCK



FAFNIR Type PB

"Economy Package"

. . . incorporates Fafnir Wide Inner Ring Bearing with Self-Locking Collar.

The new Type PB Series Pillow Block is developed to fill a specific need for a high-quality, *precision* ball bearing unit *at lowest possible cost*. It is designed for *light duty* applications. Send for descriptive bulletin. The Fafnir Bearing Company, New Britain, Connecticut.

OUTSTANDING FEATURES INCLUDE

- Two-piece, separable pressed steel housing.
- Self-alignment at assembly
- Compact . . . lightweight
- Pre-lubricated bearing . . . Plyo-Seal protected
- For shaft sizes up to and including 1¼".

FAFNIR BALL BEARINGS Most Complete Line in America

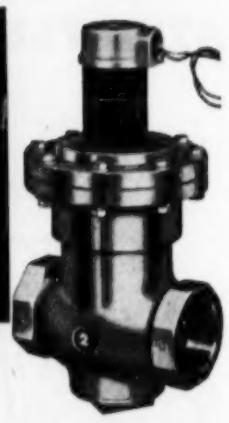
If you write maker identify as IEN - 13993

NEW...IMPROVED!

Stick-Free

Steam Valves

Atkomatic SOLENOID ELECTRIC VALVES



New engineering features prevent "sticking" . . . assures trouble-free operation.

Expansion caused by high temperatures combined with deposits of iron oxide, boiler compound, lime, etc., the common cause of most steam valve failures, no longer affect normal operation. Valve efficiency is increased, maintenance costs reduced, and plant operation improved. Pressures to 150 pounds P.S.I.—temperatures to 400° F.—sizes ¼" to 3".

Write for more complete information

ATKOMATIC VALVE COMPANY
545-A ABBOTT STREET • INDIANAPOLIS 25, INDIANA

If you write maker identify as IEN - 13994

helps prevent colds

Production line and office workers can now work in absolute comfort

The new low priced ELECTRO MAT throws off a gentle warmth that keeps workers healthy, happy and comfortable. 14" x 21" portable foot warmer is safe and economical . . . consuming less power than a 75 Watt light bulb. It is made of high quality neoprene rubber.

Attention Employers

Increase the efficiency of your employees and help prevent colds which cause absenteeism by equipping each employee with an Electro Mat.

Mail check or money order today Only $6.95 f.o.b. factory.

IMPORTANT SAVING: If 6 or more Electro Mats ordered price is only $5.95
Please send me: ☐ Electro Mat at $6.95 each. Enclosed is my check ☐ money order ☐ ☐ C.O.D. I am enclosing $1.00. Will pay postman balance of $5.95 plus C.O.D. and freight charges.
Name _____
Street _____ Zone ____
City _____ State _____
10 Day Money Back Guarantee
INTERSTATE RUBBER PRODUCTS CORP., Dept. 111
908 Avila St., Los Angeles 12, California

Dealer Inquiries Invited.

NEW LITERATURE—Continued

Identify as IEN - 0932

FASTENINGS . . 80-page Catalog 530 gives sizes, weights and list prices on cap and set screws, machine bolts, stove bolts, sheet-metal screws, nuts, washers, rivets. Triplex Screw Co., 5315-19 Grant Ave., Cleveland 5, Ohio

Identify as IEN - 0933

FIRST AID . . Each type of dressing or treatment in Type-D All-Weather first aid kit is contained in a standard unit-size package. Each treatment is complete in itself. Kits and refills are listed in 6-page Bulletin 0401-2. Mine Safety Appliances Co., 21 Braddock St., Pittsburgh 8, Pa.

Identify as IEN - 0934

FLOORS . . Armco Stelcon steel floor plate has prongs which embed in a concrete base. Openings allow 25 surface islands of concrete to form and minimize slipping. The company offers the plate for new or resurfacing service where shock and abrasion are present. "Metile Floors", 4 pages. Flash-Stone Co., 3721-25 Pulaski Ave., Philadelphia 40, Pa.

Identify as IEN - 0935

GAGE . . Alignment indicator mounts in a machine spindle, shows relative location of center and alignment for jigs and fixtures. Circular 253, 4 pages. National Automatic Tool Co., 49 National Ave., Richmond, Ind.

Identify as IEN - 0936

GAGES . . Precision scales, circular and linear, made to specification on dividing machines and other equipment, also optical parts, test patterns. Booklet RD, 8 pages. W. & L. E. Gurley, 515 Fulton St., Troy, N. Y.

Identify as IEN - 0937

GAGES . . Cartridge-like pneumatic gaging heads to use with pneumatic indicating gages for height, concentricity, diameter, runout, squareness, depth measurements. Single and multiple applications are covered in 24-page "Plunjet" bulletin with notes on use in machine control. Sheffield Corp., 719-23 Springfield Ave., Dayton 1, Ohio

Identify as IEN - 0938

GLASS PARTS . . Lenses, reflectors, TV tube parts, instrument faces, dials, nameplates, and miniature parts such as clip-on indicators. Examples in 8-page catalog. Lancaster Lens Co., Front, Main & Chestnut, Lancaster, Ohio

Identify as IEN - 0939

SPACE HEATING . . Finned-pipe radiator for steam and hot-water service, low or high pressure. You can use it one, two or three-high, in one of three sizes, to meet your heating demand. "Fin-Tube Radiators", 4 pages. Lee Vine Fin-Tube Radiator Co., 12 Fair St., New Haven 11, Conn.

Identify as IEN - 0940

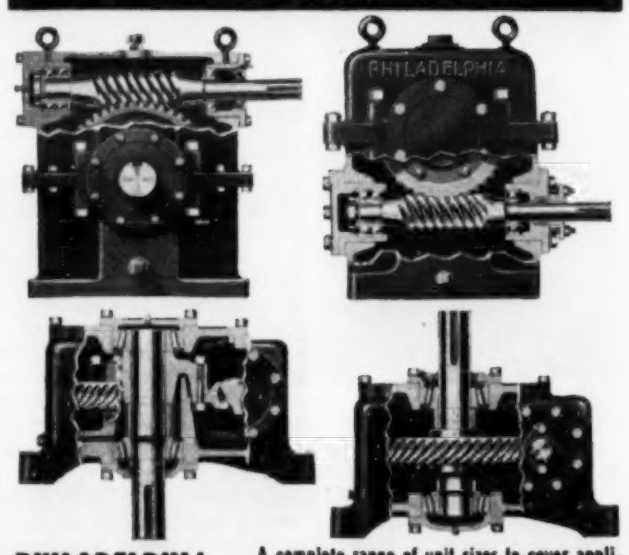
SPACE HEATING . . Standard coils for use with steam or hot water, also special units to build into original equipment. Thirty-six page Catalog 4553 gives selection instructions and examples, piping diagrams. Young Radiator Co., 719 Marquette St., Racine, Wis.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13995

For Right Angle Drives

HORIZONTAL OR VERTICAL

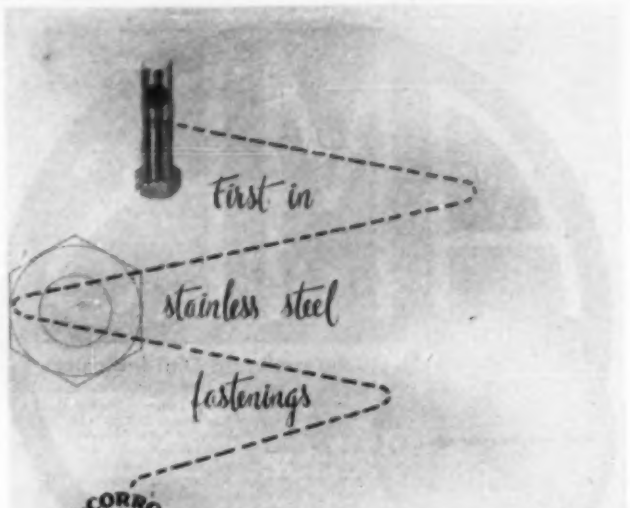


PHILADELPHIA WORM GEAR SPEED REDUCERS

A complete range of unit sizes to cover applications from ¼ to 265 H.P. Ratios from 3⅝ to 1 to 6300 to 1. Our latest catalog WG-51 shows complete details. Please write on your business letterhead.

PHILADELPHIA GEAR WORKS, Inc.
ERIE AVENUE AND G STREET • PHILADELPHIA 34, PA.
NEW YORK • PITTSBURGH • CHICAGO • HOUSTON • LYNCHBURG, VA.

If you write maker identify as IEN - 13996



ANTI-CORROSIVE METAL PRODUCTS

behind this symbol is an on-hand inventory of *more than 9,000 items and sizes* of stainless steel fastenings. Ready for immediate shipment, this stock is the largest and most complete in the industry. In addition, a production capacity for large or small quantities of special orders is at your service! A good reason—when you think of stainless steel fastenings—to think FIRST of Anti-Corrosive! *Send for Catalog 53V today!*

ANTI-CORROSIVE METAL PRODUCTS CO., INC.
Castleton-on-Hudson, New York

If you write maker identify as IEN - 13997

ACRA ELECTRIC CARTRIDGE HEATERS

FOR SUPERIOR SERVICE IN PACKAGING MACHINES, DIE-BLOCKS, HEAT-SEALERS OR FOR OPERATION AT AMBIENT TEMPERATURES

Acra heating elements give uniformly dependable service because they are designed and made to proven performance standards. Volume production, due to continuing specification by important manufacturers nationwide, provides Acra advantages in initial costs.

RAPID HEAT-TRANSFER
LONGER LIFE
LOWER COST

- FASTER HEATING: Because resistors are closer to external surfaces of heaters.
- LEAD STRUCTURES: Widest variety. Firmly anchored.
- ENCLOSURES: Brass, steel or stainless steel alloys. Ends plain or brazed, as required.
- STANDARD DIAMETERS: ¾" thru 1". Lengths, 1⅛" to 24". (.002" to .003" under fractional dimensions.

STOCK OR TO ORDER: FOR ALL TYPES OF INDUSTRIAL APPLICATIONS

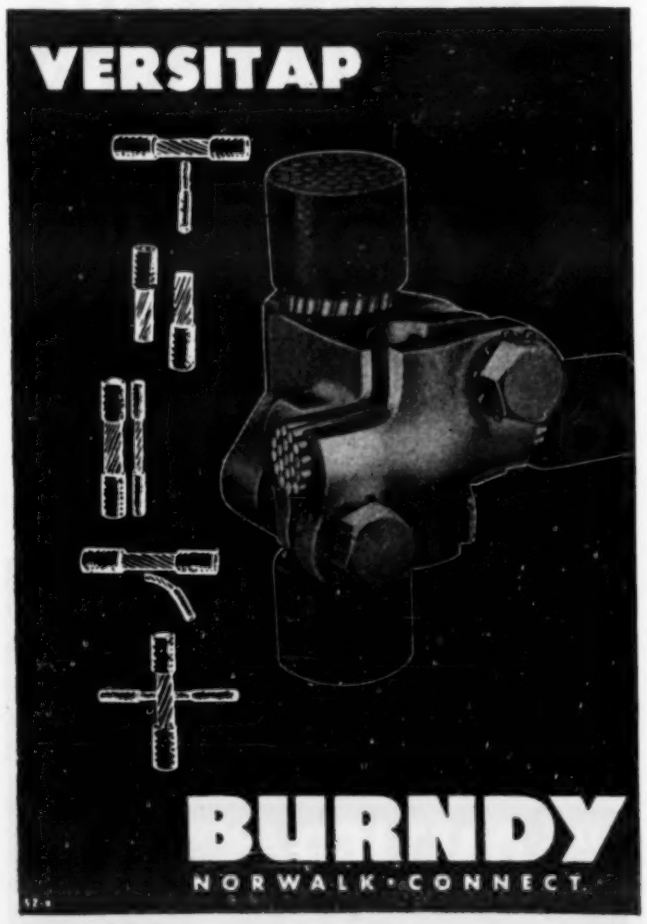
"ACRAWATT THINSTRIP" Reflexed Bands and Bars. Compacted Core cartridges. Immersion Heaters. Whether for weight-saving or cost-saving characteristics, it will pay you to get our quotations on short or long repetitive runs. Acra ability and experience are recognized by many leading engineers and manufacturers.

WRITE FOR BULLETINS AND CATALOG

ACRA INDUSTRIAL ELECTRIC CO.
9905 PACIFIC AVENUE
FRANKLIN PARK, ILL.

If you write maker identify as IEN - 13998

VERSITAP



BURNDY
NORWALK • CONNECT.

If you write maker identify as IEN - 13999

Why pay for unneeded "specs" in ball bearings?

This free catalog tells you how to cut bearing costs

Replace precision bearings with "commercials" and you save. You can do this under certain conditions, and this catalog tells you what they are. Write for it today.

The oldest, largest manufacturer of "Commercial" Ball Bearings

SCHATZ "Commercial" BALL BEARINGS

THE SCHATZ MANUFACTURING CO. • 6750 Fairview Ave., Poughkeepsie, N.Y.

If you write maker identify as IEN - 14000

SKIL 7" Disc Sander—Model 851—Standard Duty
(SKIL Disc Sander—Model 852—Heavy Duty)

SKIL brings you the greatest advance in disc sander design in years! With 30% more power, these two new tools are ideal for use with sandpaper discs, cup grinding wheels, wire brushes and reinforced raised hub discs.

Easier, Safer To Use—New, compact design results in shorter overall length, shifts tool balance forward, over spindle. Has gear locking pin for quick accessory change-over, dust-proof enclosed trigger switch with locking button for quick, positive control.

Faster Working—New, higher speed gets maximum efficiency from various accessories. More powerful motors maintain high speed under load. Easier handling qualities shorten job time.

Quiet, Cool-Running—Special rubber gear cushion lessens noise, effects longer gear life. Improved ventilation system provides continuous flow cooling; holds intake of dirt and grit to a minimum.

Lower Maintenance—Large commutator and brush inspection port permits easy checking or cleaning. Equipped with stronger handles, extra-long cord protector.

Ask for a demonstration of these two new SKIL Disc Sanders—see how they can save you time, money and material.

Made only by SKIL Corporation
formerly SKILSAW, Inc.
5033 Elston Avenue, Chicago 30, Illinois
3601 Dundas Street, W. Toronto 9, Ontario
Factory Branches in All Leading Cities

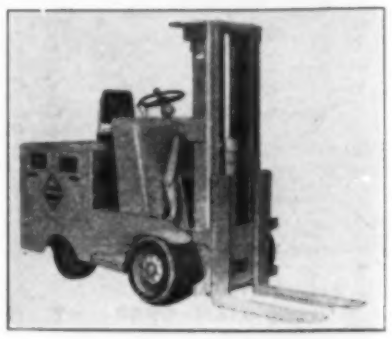
SKIL PORTABLE TOOLS

SEE YOUR DISTRIBUTOR FOR COMPLETE INFORMATION OR CALL YOUR NEAREST SKIL FACTORY BRANCH

If you write maker identify as IEN - 14002

TRUCK . . Electric fork lift handles 5 ton load to 110 in. at 15 fpm.

Source: ELWELL-PARKER ELECTRIC CO.
4060 St. Clair Ave., Cleveland 3, Ohio



Tilts forward and back

Battery operated motor drives the front wheels on this new 5-ton truck. Steering connects to the rear wheel. The motor also drives a pump supplying hydraulic pressure to the lift and tilt movements. Hoist speed is 30 fpm. free, 15 fpm. loaded in "up" direction. Downward movement is at 35 fpm. Travel speed, with a rated load, is 4 mph. and without the load is 4½ mph.

The truck measures 97 in. in length without the forks and 83 in. in height when the forks are in loaded position. Maximum upright height in 146 in. with maximum lift at 110 in. on the forks. Wheel base measures 61 inches. The truck will turn in 83-in. intersecting aisles when it has 42-in. forks.

If you write maker identify as IEN - 14003

METAL ALLOY . . Sintered material has density of 17 gm. per cu. cm.

Source: CARBOLOY
11167 E. 8-Mile Road, Detroit 32, Mich.

Heavier than lead

Two grades are now available of the metal alloy Hevimet, previously described IEN-1106-48. One grade of this material, which is 50 per cent heavier than lead, is particularly suited for radiation shielding since it provides 1½ times more gamma ray protection than lead. The second grade features high tensile strength for applications such as balance weights for crankshafts, centrifugal clutches and rotating parts and mechanisms requiring high inertia with small size.

The alloy contains copper, nickel and tungsten. It is formed and sintered into a non-porous structure with tensile strength of 85,000 to 118,000 lb. per square inch. Hardness is 30 to 40 on the Rockwell C scale. The material can be machined, plated, silver soldered, brazed. The largest piece that could be made, when the material was first announced, measured 3¾ by 9 by 2 inches.

If you write maker identify as IEN - 14004

CONTROL . . Electronic equipment sends control signals over power lines

Source: VOCALINE COMPANY OF AMERICA INC.
12 Coulter St., Old Saybrook, Conn.

Plug in connection

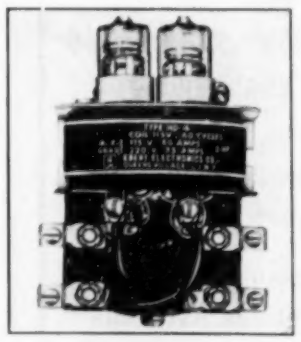
Radio frequency signals are transmitted over existing power lines by application of the company's new Type RT-1 transmitter. The signals are received by one or the other of the units shown in the illustration. One is for loads to 5 amp., the other to 20 amperes.

A feature in the equipment is its ability to blank out foreign impulses caused by other devices using the same power lines so only the transmitter signal actuates the receiver.

If you write maker identify as IEN - 14005

RELAY . . Sealed mercury design has rating of 60 amp. on 110 volt ac.

Source: EBERT ELECTRONICS CO.
212-24 Jamaica Ave., Queens Village 28, N. Y.



For contactor duty

Type HD-4 is a new two-tube relay, each tube controlling 60 amp. at 110-volt ac. or 35 amp. at 220-volt ac. Capacity per tube is 12 amp. on 110-volt dc. The unit is rated at 2 hp. on 110-volt single-phase ac. for motor control. The relay employs mercury-to-mercury contacts in a sealed assembly that is spark proof and requires no contact maintenance.

Operation is by opening and closing the circuit to a solenoid surrounding the tubes. The design can be specified with both tubes normally open or normally closed. It also is available for use in standby power or switching with one tube open and the other closed.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14006

A Better All-Purpose Industrial Glue

WOOD GLU is a very strong, *fast-setting new* COLD liquid Resin Glue . . an outstanding Paisley scientific development. Now you can bond, *in 20 to 30 minutes*, many different materials heretofore impossible to join with ordinary Wood Glues.

Paisley WOOD GLU is ideal for industrial wood joining operations. Also for faster assembly gluing and bonding of laminated plywood, paperboard, fabrics, leather and similar porous materials. Use it as received, with flow guns, brushes, spreaders. Mail the coupon order form below for trial shipment, on approval!

Gentlemen: Ship on approval, f. o. b. Chicago or New York, the WOOD GLU indicated below: ____ cases 12/qts. @ $2.10 qt. ____ cases 4/1 gals. @ $6.00 gal. ____ 5 gal. cans (bulk) @ $5.50 gal.

Paisley ADHESIVE

Name _____

Address _____ City _____ State _____

PAISLEY PRODUCTS INCORPORATED
Division of MORNINGSTAR, NICOL, INC.
1770 CANALPORT AVENUE, CHICAGO 16, ILLINOIS • PHONE CANAL 6-2219
630 WEST 51st STREET, NEW YORK 19, N.Y. • PHONE COLUMBUS 5-2860
Manufacturers of Glues, Pastes, Resin Adhesives, Cements and Related Chemical Products

If you write maker identify as IEN - 14007

Plain Talk... about BAKELITE Polyethylene

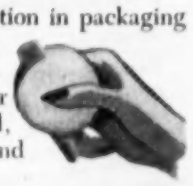
EVERY MANUFACTURER . . . every industry can benefit by polyethylene's remarkable combination of useful properties and methods of fabrication—surpassing those of any other material in the history of plastics.

BAKELITE *Polyethylene* is a big plastic—big in its present uses, far bigger in its future uses. Remember, it is only ten years old.

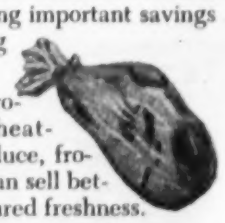
Industry has only scratched the surface of what it may do.

Yet, already BAKELITE *Polyethylene* makes water pipe that answers a centuries'-old search. It's light in weight, won't rust or corrode, is smooth-walled for full flow, and easy to install.

BAKELITE *Polyethylene* started a revolution in packaging with the unbreakable squeeze bottle dispensing everything from cosmetics to insect sprays, shampoos to lubricants, car washes to medicines . . . in colorful, styled packaging with dramatic sales and utility appeal.



BAKELITE *Polyethylene* gives industry a new way to handle corrosives in carboys and containers that are tough, shatterproof, won't crush or leak, unaffected by most chemicals . . . and so light in weight they bring important savings in shipping and handling costs.



BAKELITE *Polyethylene* provides film and easily-heat-sealed bags for packaging fresh produce, frozen foods...literally everything that can sell better by the appeal of visibility and assured freshness.

Already, in scores of other ways . . . for covering for wire and cable . . . as an additive for wax paper . . . for soft, scratch-preventing tool cases and for an unlimited future of other uses. BAKELITE *Polyethylene* has opened a new frontier to the imagination and ingenuity of industry.

The plain fact is that BAKELITE *Polyethylene* has so many advantages that demand has exceeded supply. But, much more is coming. Even now, new plants are under construction.

Will you be ready when they are? You can be. Start today, by writing for a copy of our free booklet, BAKELITE *Polyethylene*. It's packed with facts and illustrations of what this plastic can do. Write Dept. SA-14.

BAKELITE TRADE-MARK Polyethylene

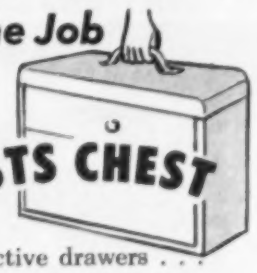
BAKELITE COMPANY
A Division of Union Carbide and Carbon Corporation UCC
30 East 42nd Street, New York 17, N. Y.

If you write maker identify as IEN - 14009

Tote Your Tools to the Job

with the handy

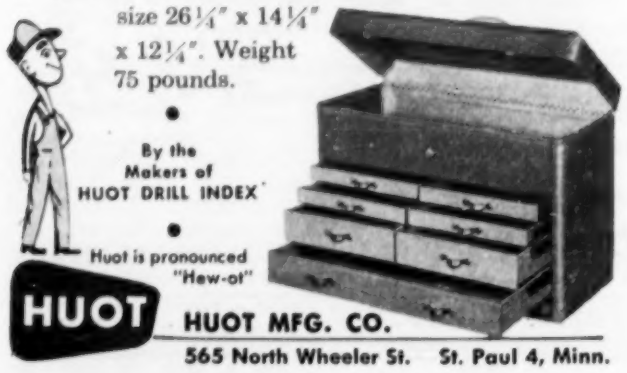
HUOT MACHINISTS CHEST



MODEL 104. Cork lined protective drawers . . . one turn of the key fastens cover and all drawers with patented lock . . . smooth, streamlined, easy-to-clean . . . holds a full 18" scale. Over-all 19¾" long, 13¾" high, 8¾" deep and weighs only 26 pounds.

MODEL 105. Although non-portable, it's a "king-size" chest for tools up to 24". 9 drawers. Overall size 26¼" x 14¼" x 12¼". Weight 75 pounds.

Ask your distributor, or write for bulletin



By the Makers of HUOT DRILL INDEX

Huot is pronounced "Hew-ot"

HUOT

HUOT MFG. CO.
565 North Wheeler St. St. Paul 4, Minn.

If you write maker identify as IEN - 14010

You Just Can't File Away These Problems . . .

BLAST CLEANING

. . . of bridges, buildings, tanks, structural work

Pangborn Blast Cleaning Machine—Cleans tanks, bridges, structures quickly and economically. Ideal for maintenance and other jobs, such as removal of dirt, rust, etc. Six sizes, stationary or portable, $188 and up.

. . . of small castings, forgings, stampings, heat treated parts.

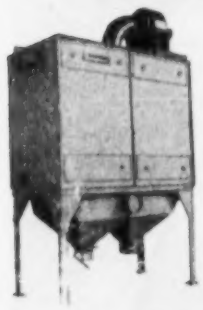
Pangborn Blast Cabinet—Saves time and money in cleaning small metal parts, removing rust, scale, grime, old paint, etc., in a few seconds. Perfect for producing clean, smooth surfaces on pieces 60" x 35" in size. Models from $319 and up.

PRECISION FINISHING

. . . of molds, dies, tools

Pangborn Hydro-Finish Cabinet—Removes scale and directional grinding lines . . . holds tolerances to .0001" and prepares surfaces for painting or plating. Liquid blast reduces costly hand cleaning and finishing of molds, dies, tools, etc. Models from ..... $1410 and up.

CONTROLLING DUST



. . . at the source of origin

Pangborn Unit Dust Collector—Traps dust at the source. Reduces maintenance costs . . . keeps plant clean and improves community relations. Allows reclamation of valuable material. Models from ..... $286 and up.

BUT YOU CAN MAIL THIS COUPON TO PANGBORN FOR HELP IN SOLVING THEM!

Pangborn

Look to Pangborn for the latest developments in Blast Cleaning and Dust Control equipment

☐ Blast Cleaning Cabinets
☐ Blast Cleaning Machines
☐ Unit Dust Collectors
☐ Hydro-Finish Cabinets

PANGBORN CORP., 2300 Pangborn Blvd., Hagerstown, Md.
Gentlemen: Please send me more information on the equipment I've checked. To be used for.....
.....
Name .....
Company .....
Address .....
City .....Zone....State.....

NEW LITERATURE—Continued

Identify as IEN - 0941

THERMAL INSULATION . . Materials for temperatures from minus 400 to plus 3,000 deg. F., also Transite pipe for corrosive liquids and gases, packings and gaskets. "Products for Process Industries", 8 pages. Johns-Manville, 22 E. 40th St., Dept. IEN, New York 16, N. Y.

Identify as IEN - 0942

LAPPING . . Centerless lapping machine for cylindrical work employs two sets of rolls, one for roughing, one for finishing to about 1 microinch rms. Capacity is for work from .003 to 10 in. in diameter. Bulletin L-53, 4 pages. Size Control Co., 2508 W. Washington Blvd., Chicago 12, Ill.

Identify as IEN - 0943

LATHE ATTACHMENTS . . Chucks, dogs, collet attachments, live centers, milling and grinding attachments, tools and tool holders, drill-press attachments, coolant equipment. Mailing Folder 5321-C, "165 Reasons Why", 16 pages. South Bend Lathe Works, 301 E. Madison St., South Bend 22, Ind.

Identify as IEN - 0944

LATHES . . Models with 9 to 12-in. swing, V-belt or variable-speed drive, also accessories and tools. Catalog CC-2, 16 pages, letterhead request please. Logan Engineering Co., 4905 W. Lawrence Ave., Chicago 30, Ill.

Identify as IEN - 0945

PLANT LAYOUT . . Two-dimensional templets on adhesive-backed film are employed with a transparent grid sheet to scale. Prints then can be made direct. Catalog, 64 pages, letterhead request, reproduces 10,000 stock templets of machine tools, shop and office equipment. Repro-Templets Inc., River Road & Pennsylvania Ave., Oakmont, Pa.

Identify as IEN - 0946

MARKING . . Make your own label by writing on the Labelon plastic tape. It adheres without moistening, resists dirt, oil, water, acids, comes in rolls, flat labels and folders. Folder 11, 4 pages, has a sample for you to try. Labelon Tape Co., 448-52 Atlantic Ave., Rochester 9, N. Y.

Identify as IEN - 0947

MELTING . . Tanks to melt and hold for dipping such materials as wax, paraffin, oils and strippable plastic coatings are cataloged in 12-page Bulletin 440. Aeroil Products Co., 67-71 Wesley St., South Hackensack, N. J.

Identify as IEN - 0948

PERFORATED METAL . . Oblong, round, square, ornamental perforations from .02 to 9.5 in. in diameter in a range of metals. 36-page Catalog 39 gives tables of sizes, open areas, gage limits, covers applications including Rigidized metal. Diamond Mfg. Co., 10 Diamond Ave., Wyoming, Pa.

Identify as IEN - 0949

METAL TREATING . . Sample strip of steel, included with new three-piece information kit on Vinsynite, shows how the material produces a phosphate coating together with a thin organic coating when applied. Specialty Coatings Inc., 1083-87 Allegheny Ave., Oakmont, Pa.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14012

Convert your shop air line . . . into High Hydraulic Pressure!

WITH WATSON-STILLMAN DOUBLE ACTING AIR ENGINE PUMP

Connect this light efficient, portable unit to your low pressure air line. Result — Pressures for all types of Hydrostatic testing.

Can also be used for operation of small Hydraulic machinery and jacks. Available in discharge capacities up to 6000 p.s.i.

Write for literature.

WATSON-STILLMAN FITTINGS DIVISION
H. K. PORTER COMPANY, INC.
141 Aldene Rd., Roselle, New Jersey

9-0-15

If you write maker identify as IEN - 14013

Star has 'em WHEN YOU WANT 'EM!

STAINLESS STEEL FASTENINGS OF ALL TYPES RIGHT OFF THE SHELF

In-Stock-Service on small or large quantities • Cap Screws • Machine Screws • Sheet Metal and Wood Screws • Set Screws • Nuts, Washers, etc.
Class 3 AN Drilled Fillister Heads
Titanium Bolts Now Available; Inquiries Invited
Fast service on special screw machine products.
WRITE, WIRE OR PHONE TODAY
New Catalog available

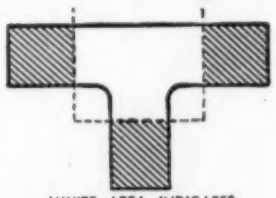
Star STAINLESS SCREW CO.
ARmory 4-1240
212 Union Avenue • Paterson 2, N. J.
Direct NEW YORK Telephone: WIsconsin 7-9041

If you write maker identify as IEN - 14014

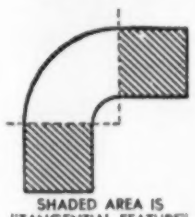
How the *Speedline* "TANGENTIAL FEATURE" cuts stainless piping costs

Now you can save up to 50% on corrosion-resistant lines by using light wall stainless pipe and versatile *Speedline* Fittings.

The added straight section of corrosion-resistant *Speedline* Fittings permits attaching unions or flanges without fouling . . . reduces number of welds required . . . simplifies installation . . . eliminates angle joints.



WHITE AREA INDICATES CONVENTIONAL FITTING



SHADED AREA IS "TANGENTIAL FEATURE"

SEND FOR LATEST INFORMATION

Write a note on your company letterhead to get the complete story on the many cost-saving advantages of the *Speedline* System for process piping.

***Speedline* distributors are located in principal cities from coast to coast**

HORACE T. POTTS CO. *Since 1815*

534 Erie Avenue, Philadelphia 34, Pa.

If you write maker identify as IEN - 14015

TYGON *plastic* PAINT

STOPS ACID AND ALKALI ATTACK

Maintenance Men! You can stop corrosion before it starts — protect your plant and equipment from chemical attack — with TYGON plastic PAINT — the positive protective coating. Properly applied, TYGON offers the maximum possible in resistance to both acids and alkalies — and, to oils, greases, water and many solvents as well.

TYGON requires no more than normally good surface preparation — can be applied by brushing or spraying. TYGON dries fast — forms a tough, flexible film that's easy to clean and long-lasting. TYGON is available in wide range of colors — in quart, gallon, 5 gallon, and 55 gallon containers.

Try TYGON — buy TYGON, today, or write for full details and samples.

Plastics and Synthetics Division

U. S. STONEWARE
AKRON 9, OHIO

307C

If you write maker identify as IEN - 14016

VOLTS and AMPS at a glance with the COLUMBIA

NEW LOW PRICE!

$57.50 with Voltage Leads and Carrying Case

A. C. TONG TYPE VOLT-AMMETER

• Quickly • Accurately • Safely

Columbia Type AC-1 provides ampere readings with a snap by merely clamping jaws around the electrical conductor, without breaking circuit or insulation. Voltage readings are taken quickly and easily with safety plug-in leads. This instrument is one of the Columbia line of tong type instruments of the highest quality and dependability.

TYPE AC-1 FEATURES

- Measures up to 600 Amperes and 600 Volts.
- Amperes: 0/12/60/120/-600 A.C.
- Volts: 0/150/600 A.C.
- Convenient Range Switch.
- Insulated Jaws will accommodate Conductors up to 1½" diameter, Bus Bars up to 2" x ½".
- Accuracy: 3% full scale.
- Light Weight—Fits Easily into Pocket.
- High Quality at Low Cost.

Inquiries Invited from Distributors • Write for Descriptive Bulletin AC-19

COLUMBIA ELECTRIC MFG. CO. 4519 Hamilton Ave. Cleveland 14, Ohio

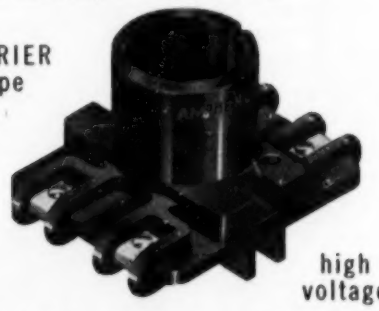
If you write maker identify as IEN - 14017

AMPHENOL

INDUSTRIAL TUBE SOCKETS

AMPHENOL manufactures a complete line of industrial tube sockets—all designed to provide exceptional performance—all sturdily constructed to give utmost dependability. Three of the most popular of these are:

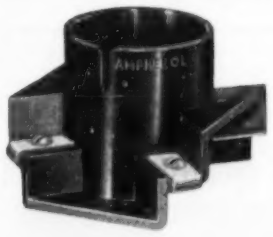
BARRIER type



high voltage

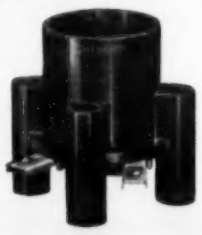
The tall barriers of these sockets provide maximum resistance to arcing and flashover. Molded in one piece of high grade electrical bakelite, they may be mounted either above or below chassis. Sockets have AMPHENOL exclusive patented "Clover Leaf" contacts.

STAIR type



Designed to improve the performance and reliability of high quality industrial electronic equipment. Long creepage paths, reversible screw terminals and AMPHENOL patented "Clover Leaf" contacts are some of the features of these sockets designed for Jumbo and Super Jumbo tubes.

STILT type



AMPHENOL Stilt type Sockets were designed for high voltage electron tubes. Sturdy one piece molded construction protects the tube. Like the other sockets listed here they fully meet NEMA Standards and Underwriters' Laboratory requirements. Equipped with AMPHENOL "Clover Leaf" contacts.

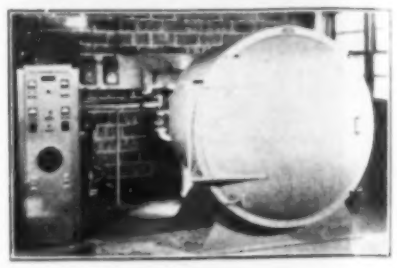
AMERICAN PHENOLIC CORPORATION
chicago 50, illinois

AMPHENOL

If you write maker identify as IEN - 14019

PROCESSING . . Vacuum equipment has 66-in. chamber for metallizing

Source: HIGH VACUUM EQUIPMENT CORP. 347-51 Lincoln St., Hingham, Mass.



Inexpensive to use

Large work pieces can be coated on a production basis by means of this new 66-in. vacuum chamber with its associated operating and control equipment. The company has added the new unit to its line which starts with 12-in. bell jar assemblies. A new 30-in. assembly has also been produced particularly to finish die cast products in place of the usual process of polishing and electroplating.

A very thin film of evaporated aluminum is coated on the die cast parts, following an initial coating of lacquer as the parts come from the mold. After the evaporated aluminum is in place, a final coating of clear lacquer is added to give durability to the mirror-like aluminum finish. Then the parts can be dipped into a water soluble transparent die for a brilliant rich-looking gold, bronze, brass, silver or gold metallic finish.

If you write maker identify as IEN - 14020

PLATING . . Chemical compound developed for bright copper plating

Source: SMOOTHEX INCORPORATED 10703-7 Briggs Road, Cleveland 11, Ohio

Eliminates copper buffing

Copper Brightener is a new chemical compound for addition to a plating bath when it is being made up and for later addition to maintain the correct solution based upon the ampere hours it has worked. The company is prepared to supply sample kits and will analyze an existing solution, without charge, to make recommendations for the conversion. It also has developed a new material to treat copper plating solutions that have been contaminated with chromium and other impurities. This compound is supplied free when a solution is being converted. Any grade, electrolytic preferred, of copper anode can be used. Bagging is necessary only when roughness is encountered. Tanks can be steel lined or lined with rubber approved for copper plating.

If you write maker identify as IEN - 14021

SCAFFOLD . . Elevating platform is wheel mounted for portable use

Source: WEBER AIRCRAFT CORP. 2818-22 Ontario St., Burbank, Calif.

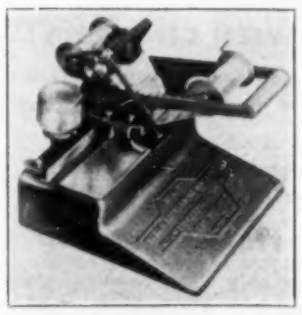
Tubular steel frame

Model 30 designates new assembly of a tubular caster mounted support, measuring 20 ft. in height, to mount the company's Aerostand 10-E, previously described IEN-281-53. The new unit can be adjusted to position the platform at 23 to 30 ft. above the ground by operating a hand hydraulic pump that supplies pressure to a cylinder supporting the top section. The work platform measures 4 by 4 feet. It is surrounded on three sides with removable safety railings. Load capacity is 1,000 pounds.

If you write maker identify as IEN - 14022

MARKING . . Spirit duplicator works from typewritten paper tape

Source: WEBER ADDRESSING MACHINE CO. 202 W. Central Road, Mount Prospect, Ill.



No stencil

A roll of addresses on a paper tape is positioned in this new Model A-3 addressing machine and the paper tape is threaded beneath a transparent pressure bar to a take-off roll. The machine then advances each name and address into correct printing position, the printing action is completed and the printed piece is ejected into a receiving tray. It can be operated at the rate of 2,000 pieces per hour.

The machine and the supply kit for a 500-name mailing list costs about $115. Supplies for additional lists are about ¾ cents per name and address. The original typewritten list can be used as many as 100 times before it requires retyping.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14023

Quick cure

for a production line headache

A NEW AIR SCREWDRIVER THAT'S REALLY QUIET

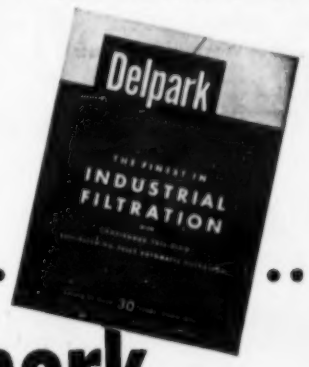
Chicago Pneumatic's new CP-3008, the really quiet air screwdriver, has supersonic exhaust . . . changes sound waves to a frequency which approaches the limit of human hearing. The rugged CP-3008 weighs only 1 lb., 14 oz. . . . has directional exhaust, built-in speed control and a simple, adjustable clutch. Has a rated range of #4, #6 and #8 screws – in some cases can be used on #2's and #10's. Write for Bulletin SP-3096. *Chicago Pneumatic Tool Company, 8 East 44th Street, New York 17, N. Y.*

Chicago Pneumatic

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

If you write maker identify as IEN - 14024

free Bulletin ON Delpark



FULL FLOW, SELF CLEANING
INDUSTRIAL FILTRATION

Here's literature that can help you solve filtration problems in your plant.

The famous Delpark Industrial Filter is designed for the maximum of filtration with the minimum of maintenance.

Full flow, self cleaning, continuous, fully automatic, Delpark Industrial Filter applications include the filtration of coolants, quenching oils, paint spray-booth water, air-conditioning wash water, and numerous other applications.

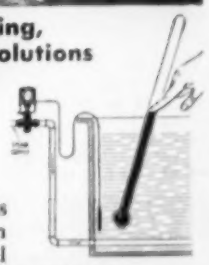
Write today for this free booklet and acquaint yourself with the facts on the finest in Industrial Filtration.

Backed by More Than 30 Years in Industrial Filtration

INDUSTRIAL FILTRATION COMPANY
95 INDUSTRIAL AVENUE LEBANON, INDIANA

If you write maker identify as IEN - 14025

For Plating Anodizing, Bonderizing, Pickling, Cleaning and Rinsing Solutions



POWERS No. 11-MF Regulators insure most effective use from various solutions by holding them at the right temperature automatically. They save Steam and Labor.

Plastic Thermal Bulb and Tubing is highly resistant to solutions used in above processes. Prevents electrical shorts. No insulators required for the regulator.

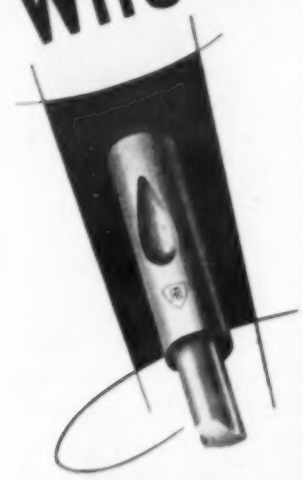
Easy to Read 4" Dial Thermometer indicates temperature of liquid being controlled and makes it easy to adjust regulator for different temperatures.

Bulletin 330 fully describes this simple, self-operating regulator. May we send you a copy? (b30)

THE POWERS REGULATOR CO., SKOKIE, ILL.
Offices in over 50 Cities, see your Phone Book • Established in 1891

If you write maker identify as IEN - 14026

WHO USES R-B PUNCHES



Through many years of providing America's leading industries with interchangeable and standardized punches, die buttons and retainers, R-B has built a reputation for increasing production, lowering costs and saving time. R-B case histories of savings and benefits include users of cam actuated, multi-station progressive, forming, blanking, piercing, embossing and combination dies of all sizes and types.

Use R-B Engineering Service for Your Tough Piercing Problems.

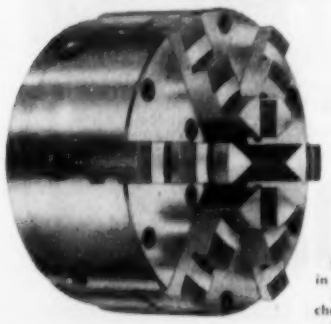
Why don't you investigate the cost saving features of R-B equipment?

RICHARD BROTHERS PUNCH DIVISION
ALLIED PRODUCTS CORPORATION
DEPT. 77 • 12615 BURT ROAD • DETROIT 23, MICH.

Also Produced in OTHER ALLIED PLANTS
SPECIAL COLD FORGED PARTS • STANDARD CAP SCREWS
PRECISION GROUND PARTS • SHEET METAL DIES MADE OF FERROUS ALLOYS, ZINC ALLOYS OR PLASTICS

If you write maker identify as IEN - 14027

YOU SAVE *Every Time You Use Buck*



AJUST-TRU Pat. No. 2639157

CHUCKS

Save machinists' time — lines up dead true in *one minute*, without shims . . .
Save operators' time — holds .0005" rechucking precision on duplicate parts . . .
Save collet and step-collet costs — the AJUST-TRU does the work of hundreds of dollars worth of collets . . .
Save distortion on tubular work . . .
Save scratches on ground, polished, work . . .
Save time and expensive holding fixtures on many grinding operations . . .
Save chuck wear — it takes up wear in use . . .
More than ever today, you need the economies of Buck chucks. Send for latest catalog.

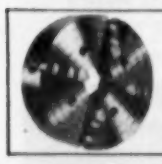
This is the only universal scroll chuck with .0005" precision. It is used on lathes, grinders, dividing heads, screw machines. Does most of work formerly requiring stub arbors, mandrels, special fixtures.

3 jaw and 6 jaw models in 4", 5", 6", 7½", and 9" sizes. 2-jaw Aviation chucks, for holding odd shaped parts in 6", 7½, and 9".

6 JAWS

OR 3 JAWS

BUCK TOOL COMPANY
2216 SCHIPPERS LANE • KALAMAZOO, MICH.



NEW SUPER-GRIP 4-JAW
INDEPENDENT CHUCK FOR 9" to 16" LATHES

Most chucks for 9" to 16" lathes are either too light and cheaply made to hold work securely, or too heavy for the lathe and clumsy to handle. Here's the happy medium — a chuck with ideal weight, providing much more "holding power" from its ½" larger diameter, finely threaded screws. Also eliminates ½" overhang . . . improves accuracy . . . permits heavier cuts. 6", 8" and 10" models. Send for latest catalog.

If you write maker identify as IEN - 14028

Yes, sir! With these
du Mont *Minute Man*® Keyway Broach Kits

You can cut
keyways from 1/16" to 1"
in bores from 1/4" to 3"
in gears, milling cutters, pulley hubs, collars, couplings, etc., etc.

IN ONE MINUTE
for as little as ONE CENT EACH

WANT SPECIAL BROACHES?
Ask us for price and delivery. We make certain types and sizes very quick and at very low cost.

CATALOG AND PRICE LIST COUPON
The du MONT CORPORATION, Greenfield, Mass.
Please mail folder and price list N on *Minute Man Keyway Broaches and Kits* to
Name.....
Company.....
Address.....

BOOTH 524 at the PLANT MAINTENANCE SHOW—January 25-28—Chicago

NEW LITERATURE—Continued

Identify as IEN - 0950

METERS . . Miniature pneumatic indicating meters for graphic process control panels are intended to warn the operator if acceptable standards are being exceeded. Construction details in 12-page Catalog 55-10. Fischer & Porter Co., 11A Jacksonville Road, Hatboro, Pa.

Identify as IEN - 0951

FLOW METER . . Instrument measures air flow, gas flow, or ratio of the two as supplied to furnaces or process operations. Dry diaphragm-type measuring element and a schematic circuit in 8-page Bulletin 52-1017-37. Hays Corp., 740-44 E. 8th St., Michigan City 16, Ind.

Identify as IEN - 0952

MILLING . . Automatic tracer-controlled machine will reproduce a two-dimensional template or three-dimensional model. Two sizes have capacity of 2½ by 5 ft. and 4 by 6 feet. Bulletin 565, "Keller BG-21", 12 pages. Pratt & Whitney, 49 Charter Oak Blvd., West Hartford 1, Conn.

Identify as IEN - 0953

MILLING . . Vertical rotary machine for production work, several examples of which are illustrated in 6-page Bulletin VR-1 along with specifications. Sundstrand Machine Tool Co., 2531 Eleventh St., Dept. IEN, Rockford, Ill.

Identify as IEN - 0954

PIPE FITTINGS . . Dryseal-thread pipe plugs produce a positive seal against liquids and gases under pressure with no sealing compound. How the thread design accomplishes this is shown with sizes in 4-page Bulletin 883. Standard Pressed Steel Co., Box 555, Jenkintown, Pa.

Identify as IEN - 0955

PIPE JOINTS . . Self-aligning swivel joints permit rotation and angular movement to 10 degrees. Fourteen styles, eight sizes from ¼ to 2 in., temperatures from minus 50 to plus 600 deg. F. Catalog 265-A, 12 pages. Barco Mfg. Co., 501 Hough St., Dept. J-35, Barrington, Ill.

Identify as IEN - 0956

PLASTIC SHEET . . Rigid material is a copolymer of styrene and rubber, intended particularly for vacuum forming. What can be done with it is described by new 4-page bulletin, "Campco S-300". Chicago Molded Products Corp., 2715-19 N. Normandy Ave., Chicago 35, Ill.

Identify as IEN - 0957

POLISHING . . Automatic machine to grind and polish flat sheet in a continuous operation, using wet abrasive belt method. "Micro-Polish" bulletin, 10 pages, shows arrangements for sheet, blank, strip materials. Murray-Way Corp., P. O. Box 180-A, Birmingham, Mich.

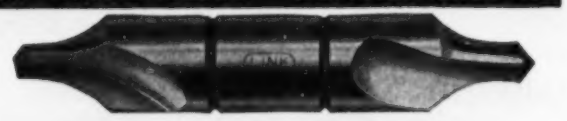
Identify as IEN - 0958

PRINTING . . Automatic typewriter records data from remote instruments as a column log, tape or on preprinted forms. It handles 50 electrical signal inputs such as temperature, pressure, flow, level, strain. Schematic diagrams and samples in 30-page 1953 catalog. Electrical Development Co., 40 E. 40th St., Dept. IEN, New York 16, N. Y.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14029

FAR LESS TIP BREAKAGE with "RING SEAT" CENTER DRILLS



USE "RING SEAT"
CENTER DRILLS
IF YOU GRIND BETWEEN CENTERS

The "R" type, curved contour Ring Seat center drills give you a stable, accurate, precision center, quickly restored after heat-treat.

Ring Seat center drills produce a protected center at no extra cost—and carry a built-in discount because they last longer.

Lapping After Heat Treat

is a simple quick operation since only about one-third the usual area needs clean-up. Lapping with a rotating felt wick removes heat scale and restores a perfect center — at the original place.

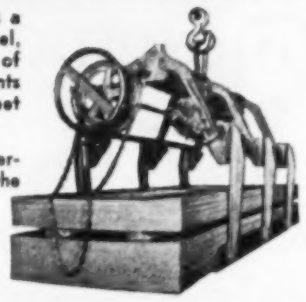
• A PREMIUM DRILL AT NO EXTRA COST •

LINK INDUSTRIES
13848 Elmira Detroit 27, Mich.
FREE CIRCULAR

If you write maker identify as IEN - 14030

Wide *or* Narrow...

1 C-F LIFTER HANDLES THEM ALL



Whether your production requires a few or many widths of sheet steel, 1 C-F Lifter, with its wide range of jaw and carrying angle adjustments will probably meet all your sheet handling requirements.

Adjustments are made by the operator in a few seconds, permitting the Lifter to shift from wide to narrow sizes almost instantly.

Because it can pick up, carry and unload more loads per hour, using less man and crane time than any other methods, a C-F Lifter will soon pay for itself.

Bulletin SL-28 gives you the complete story of C-F Lifter advantages to you. Ask for it today. There is no obligation.

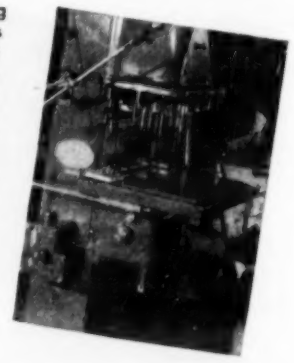
CULLEN-FRIESTEDT CO.
1310 South Kilbourn Avenue • Chicago 23, Illinois

If you write maker identify as IEN - 14031

Now PULSOLATOR is made and sold by Manzel

Manzel has added the world-famed *Pulsolator* to its established line of Force Feed Lubricators and Chemical Feeders. Thus, this 55 year old organization now offers low pressure, single pump lubrication for applications where the unlimited pressure of Manzel force feed, individual pump systems is not required.

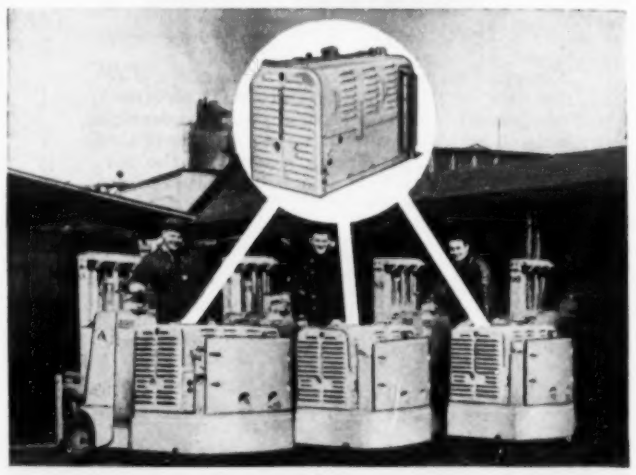
Here is a typical application showing how *Pulsolator* automatic, loop systems are used for lubricating machine tools, printing presses and comparable equipment. As many as 1,000 bearings can be lubricated by one system from a loop line of up to 300 feet. Capacities, timing, and quantity of lubricant delivered can be adapted to individual requirements. Manzel engineers will be glad to plan a system to meet your exact needs either on new machines you are planning or on existing equipment.



Manzel
DIVISION OF FRONTIER INDUSTRIES
242 BABCOCK STREET, BUFFALO 10, NEW YORK

If you write maker identify as IEN - 14032

Ready-Power is the Only Interchangeable Gas-Electric Power Unit



Interchangeable Ready-Power units allow the most economical system of preventive maintenance known, with *no truck downtime!* One spare power unit permits rotation of maintenance while trucks stay "on the job" . . . an important reason why Ready-Power drive moves materials at lowest cost per ton mile!

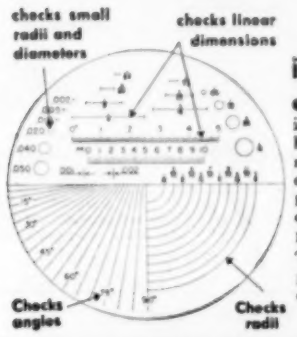
Remember . . . Your Truck Is No Better Than Its Power!

CONTINUOUS-DUTY POWER UNITS

The READY-POWER Co.
3830 Grand River Ave., Detroit 8, Michigan
Manufacturers of Gas and Diesel Engine-Driven Generators and Air Conditioning Units; Gas and Diesel-Electric Power Units for Industrial Trucks

If you write maker identify as IEN - 14033

THE Original BELL & HOWELL Pocket Comparator



Saves time and money inspecting small dimensions

● Here's *guaranteed* accuracy in checking small dimensions at a price any business can easily afford. Save time and money measuring wear on cutting tools, checking forms and dimensions of punches, dies and gauges—as well as chamfers, threads and small holes on production parts.

Thousands in use by America's leading precision manufacturers. It's the greatest time-saver since the micrometer!

price only **$36.00** order today

A product of **BELL & HOWELL CO.** Distributed by

See Your National Tool Co. Representative or Local Jobber

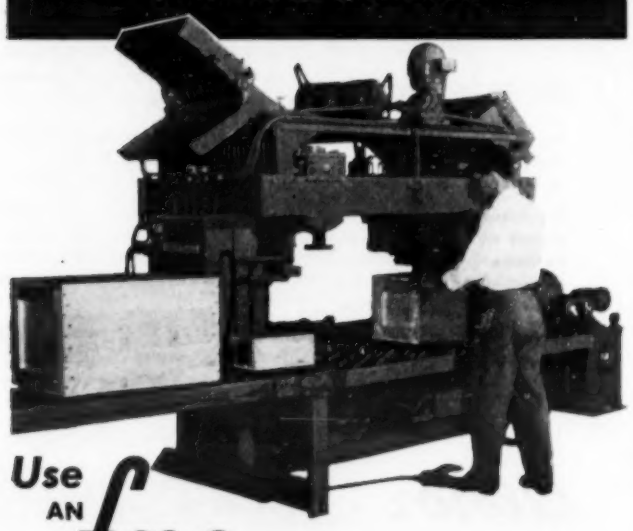
NATIONAL TOOL CO.

11220 Madison Avenue Cleveland 2, Ohio

Write for FREE descriptive folder

If you write maker identify as IEN - 14034

If you SHIP IN BOXES you can SPEED PRODUCTION and SAVE MAN HOURS WITH THIS MACHINE



Use AN fmc fast & versatile RANDOM SIZE BOX LIDDER

ON THIS MECHANICAL NAILING MACHINE ONE OPERATOR LIDS 400 TO 600 BOXES OF MIXED SIZES PER HOUR

Here is a new automatic lidding machine that can easily do work that formerly required several nailing machines. Random Size Boxes can be quickly lidded in rapid succession. Machine adjusts automatically to various box sizes. Only one operator required—lidded box is automatically ejected through open back of machine onto conveyor for removal.

A TIME-SAVING DEVICE THAT WILL PAY DIVIDENDS THRU GREATER PRODUCTION

Sorting boxes into common sizes is no longer a lidding requirement. Now, a common conveyor can transport boxes of mixed sizes from the packing area to the lidding machine. One Random Size Box Lidder and one operator are the only requirements necesary to solve this universal lidding problem.

HOW THE MACHINE IS MADE

Welded steel construction—electrically controlled—hydraulically operated—foot pedal actuated.

SIZES AVAILABLE

Only one standard size machine is needed to handle boxes varying in any dimensions from 6" X 6" X 9" to 24" X 24" X 50".

HERE'S WHERE IT IS NOW APPLIED

Proved in production by Arsenals, Air Bases and Ordnance Depots. NOW AVAILABLE FOR ANY INDUSTRY SHIPPING IN BOXES OF MIXED SIZES.

Available FROM fmc FOOD MACHINERY AND CHEMICAL CORPORATION

TRADE MARK NM953

FOOD MACHINERY AND CHEMICAL CORPORATION

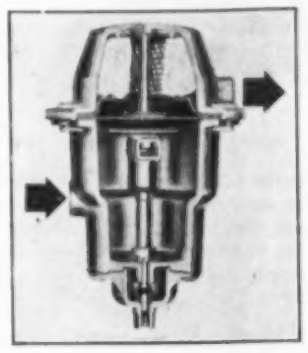
PACKING EQUIPMENT DIVISION, RIVERSIDE, CALIFORNIA

WRITE FOR FREE LITERATURE!

If you write maker identify as IEN - 14036

SEPARATING . . Air line unit drains water, oil from compressed air

Source: **WILKERSON CORPORATION**
3469 S. Platte River Drive, Englewood, Colo.



For clean dry air

Series 1002-A is new design of the diaphragm operated separator, previously described IEN-6391-51. It employs stored air pressure for discharge of accumulated water and sludge. It filters the air to the point of use. It is available in ¼, ⅜ and ½-in. pipe line connections.

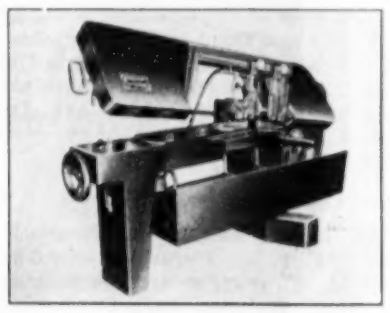
Incoming air fills the chamber below the diaphragm. It comes to rest in the comparatively large area of this chamber where it drops out moisture, oil and dirt. They move by gravity, through a port at the bottom of the chamber, to a smaller chamber where they are retained by an O-ring on the central stem that closes off the bottom outlet. This condition holds as long as the main flow outlet above the diaphragm is closed so pressure above the diaphragm holds the stem down.

As air is used and there is outward flow, pressure decreases above the diaphragm and pressure below moves it and the stem upward. This seals the passage between the main and bottom chamber by means of a second O-ring on the stem and opens the bottom outlet so compressed air, trapped in the lower chamber, blows the foreign matter out. At the same time, air moves from the main chamber through the filter at the top of the assembly to the outlet near the top. The operating cycle takes place on each closing and opening of the outlet line. Loss of air through the foreign matter discharge port is negligible. Overall dimensions range from about 4½ to 7½ in. in greatest diameter by 7½ to 11½ in. in overall height. The ¼-in. assembly lists at $19.50.

If you write maker identify as IEN - 14037

SAWING . . Band saw machine cuts 8-in. round stock, 16-in. flats

Source: **KALAMAZOO TANK & SILO CO.**
45 Harrison St., Kalamazoo, Mich.



Details upon request

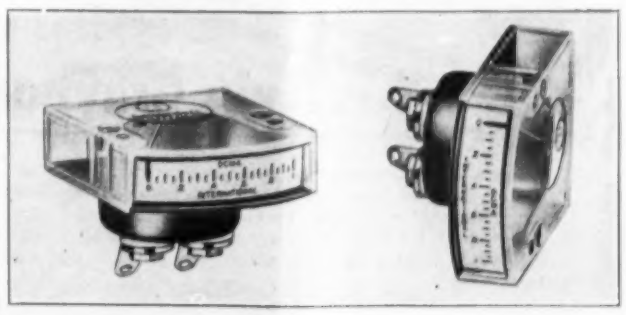
Feed into the cut is controlled by a hydraulic mechanism in this new Model-8C horizontal metal cutting band saw. Cutting action is visible to the operator. Blade change can be made quickly. Operating parts are enclosed. The machine will cut 8-in. round stock or pipe, 16-in. flat stock and a variety of shapes including very thin sections.

The cut is accurate within a few thousandths. When the blade has moved through the work further forward motion stops. Equipment is included to circulate cutting lubricants from a sump beneath the table.

If you write maker identify as IEN - 14038

METERS . . Miniature electric, side indicating for panel mounting

Source: **INTERNATIONAL INSTRUMENTS INC.**
P. O. Box 2954-A, New Haven 15, Conn.



Model 1120 details upon request

Rectangular cutout in a panel to measure 1.687 by 0.531 in. takes this new side indicating meter. Overall front to back dimension is 2.03 in. of which about ¼ in. protrudes in front of the panel. The meter has practically the same scale length and occupies 1/10 the panel area of a standard 2½-in. 90-deg. meter. Accuracy is within 3 per cent of full scale for dc. and within 5 per cent for ac. Weight is 1¾ ounces. Scale length is 1.322 inches.

The line includes dc. micro ammeters ranging from 0 to 100 to 500 ua., dc. milliammeters from 0 to 1 to 500 ma., dc. ammeters from 0 to 1 to 15 amperes. Also included are dc. millivoltmeters ranging from 0 to 50 mv., dc. voltmeters from 0 to 1 to 150 volts and ac. voltmeters, rectifier type self-contained, ranging from 0 to 1 to 150 volts. The housing is dust proof black anodized aluminum with a clear plastic cover.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14039

POWER CABLE *rubber-type for circuits to 15,000 volts*

FREE BOOKLET tells uses and advantages of General Electric's Super Coronol*-Geoprene nonmetallic power cable

Initial cost is *low*—installation cost is *low*—maintenance and replacement costs *remarkably low*. G-E Super Coronol-Geoprene power cable gives long service because both insulation and jacket are made from slow-aging materials.

Super Coronol-Geoprene cable permits either greater current-carrying capacity or smaller conductor size than has heretofore been possible with high-voltage rubber-type cable.

This cable is designed for continuous operation at copper temperatures of 85 C to 8,000 volts, and of 80 C in the 8,001 to 15,000 volt range.

For your copy of the booklet, *Super Coronol-Geoprene Power Cable*, write to Section W89-1242 Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.

*Registered Trade-mark General Electric Company

You can put your confidence in—

GENERAL ELECTRIC

If you write maker identify as IEN - 14040

Bulk-Handling "BUSYBODY"

"PAYLOADERS" are unusual and versatile tractor-shovels that stick their noses into all sorts of bulk material handling jobs, indoors and outdoors. They unload boxcars, load trucks, charge hoppers, carry, stockpile and spread . . . they spot cars, lift, lower and push.

Multiple forward and reverse speeds and big pneumatic tires gives them mobility and speed so they can do more jobs faster . . . save time, manhours and increase production. "PAYLOADERS" are made in sizes from 15 cu. ft. to 1½ cu. yd. bucket capacity. There's a model for every job and full facts are yours for the asking. The Frank G. Hough Co., 841 Sunnyside Ave., Libertyville, Illinois.

PAYLOADER® THE FRANK G. HOUGH CO. • Since 1930

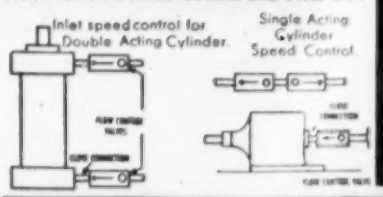
If you write maker identify as IEN - 14041

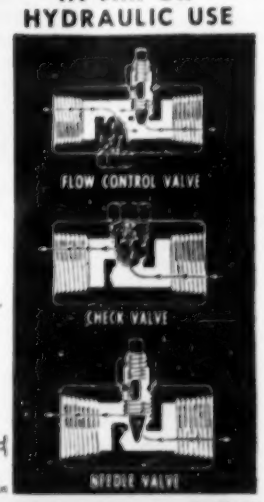
Get Easier, More Accurate Cylinder Speed Control with Pneu-Trol VALVES IN AIR OR HYDRAULIC USE

2000 and 5000 (steel) P.S.I.

Pneu-Trol Valves combine in a short, compact body, a tapered fine thread needle for extremely accurate air or oil flow control and a floating retro ball check, which permits full flow in the opposite direction. Retro ball floats in most sensitive position to seat, requiring only a slight differential pressure to fully open or close it. Check Valve and Needle Valve incorporate single function features of Flow Control Valve. All valves available in 6 female pipe sizes — ⅛" to ¾". Valve bodies are made from brass, aluminum, steel or stainless steel. Attractive Prices — Immediate Delivery.

Write for Illustrated Circular and Price List.





Pneu-Trol Devices, Inc.
1438 N. Keating Ave., Chicago 51, Ill.

If you write maker identify as IEN - 14042

Increase Your Output up to 300%...

Get Accurate Fines with...

STURTEVANT Whirlwind Centrifugal SEPARATORS

The Sturtevant Air Separator is one investment that pays off daily profits by increasing production and reducing costs. Its extremely efficient operation assures finer separation of fine material from coarse material with the result that uniform quality of product is always obtained.

They'll not only increase your output by as much as 300%, but provide 10 to 50% savings in power costs, too. They are available in sizes 3 to 16 feet in diameter with capacities from ¼ to 50 tons per hour with a fine-product range of 40 to 325 mesh or finer. Bulletin 087 gives the entire story. Write for your copy.

STURTEVANT MILL COMPANY
113 CLAYTON STREET, BOSTON 22, MASSACHUSETTS
DESIGNERS & MANUFACTURERS OF
CRUSHERS • GRINDERS • SEPARATORS • CONVEYORS
MECHANICAL DENS AND EXCAVATORS • ELEVATORS • MIXERS

If you write maker identify as IEN - 14043

Ready for you after 12 months of brutal

CUSTOMER TESTING!

CLARK's

New and Exclusive

HYDRATORK DRIVE*

Here's how it improves your fork-truck operation:

1 **MORE WORK:** faster get-away, positive power without slippage; moves heavy loads and climbs ramps with ease.

2 **LOWER COST:** higher percentage of "on-the-job" time results from no clutch problems, "cushioning" effect on motor and drive members.

3 **GREATER SAFETY:** hydraulic brake system, linked to torque converter, automatically cuts power; engine cannot be started unless controls are in neutral.

4 **IMPROVES DRIVER EFFICIENCY:** finger-tip direction control and elimination of gear-shifting conserves operator energy

Not one, but *eighteen* HYDRATORK-equipped trucks were placed in customers' plants for a full year of on-the-job testing. Without exception, these units proved that reduction in driver fatigue and of truck downtime results in greater production from HYDRATORK-equipped trucks.

* *Now available in 6-7000 lb. capacity truck*

1903 1953 CLARK EQUIPMENT

Mail the coupon for detailed literature which explains how CLARK's new and exclusive HYDRATORK DRIVE operates.

CLARK ELECTRIC, GAS, DIESEL, L.P. GAS **FORK TRUCKS**
AND POWERED HAND TRUCKS • INDUSTRIAL TOWING TRACTORS

INDUSTRIAL TRUCK DIVISION • CLARK EQUIPMENT COMPANY • BATTLE CREEK 49, MICHIGAN
Please send: ☐ Hydratork literature ☐ Condensed catalog
☐ Have representative call
Name_____
Firm Name_____
Street_____
City_____ Zone____ State_____

AUTHORIZED CLARK INDUSTRIAL TRUCK PARTS AND SERVICE STATIONS IN STRATEGIC LOCATIONS

NEW LITERATURE—Continued

Identify as IEN - 0959

PRINTING . . Attachment for the Derby packaging-tape dispenser prints plain tape with company name, code date, product identification, operator number, as it is used. Operating instructions in 4-page Bulletin 131. Kiwi Coders Corp., 3802-6 N. Clark St., Dept. IEN, Chicago 13, Ill.

Identify as IEN - 0960

PROTECTING . . Guide-pin cover for a press die is a spiral of strip steel that extends into a cone as the press moves up. How it protects the operator and the guide pins is described in 4-page Elasticone Bulletin 53. Central Safety Equipment Co., 2202 E. Huntingdon, Philadelphia 25, Pa.

Identify as IEN - 0961

CENTRIFUGAL PUMP . . Multi-stage design is for pressures from 300 to 1,000 lb. and capacities to 700 gpm. Interchangeability of parts is a construction feature. Bulletin 7251, 18 pages, on Class CNTA. Ingersoll-Rand Co., 746 Morris Ave., Phillipsburg, N. J.

Identify as IEN - 0962

RECORD KEEPING . . Microfilm record equipment employs standard index and punch cards as microfilm holders to assist in filing and finding. Types of holders, preparation and viewing equipment, uses in 20-page "New Horizons . .". Filmsort Inc., 48-52 S. Pearl St., Pearl River, N. Y.

Identify as IEN - 0963

RELAYS . . Standard, time-delay, sensitive, miniature relays made to meet your specifications, also stack and snap switches. "Relays and Switches", 4 pages. Jaidinger Mfg. Co., 1919-23 W. Hubbard St., Chicago 22, Ill.

Identify as IEN - 0964

SAWING TOOLS . . Two blades reciprocate at the end of a portable pneumatic tool to duplicate cutting action of a handsaw in wood with about 20 times the speed. Cutting capacity is 21 inches. Folder 101-B, 8 pages. Wright Power Saw & Tool Corp., 288 Longbrook, Stratford, Conn.

Identify as IEN - 0965

O-RING SEALS . . Data book of 82 pages lists at $4, deals with O-rings, U-cups, V-rings and Quad rings. It includes information on industry standards, conversion tables, facilities for molding rubber parts. Title is "Graphic Impression". Minnesota Rubber & Gasket Co., 3060 Wooddale Ave., Dept. IEN, Minneapolis 16, Minn.

Identify as IEN - 0966

SEWING . . Special machines for bag-making operations on cotton, burlap, jute, multiwall paper. Pictures in new 6-page Bulletin 262 show seaming, overseaming and hemming constructions along with a recommendation chart. Union Special Machine Co., 402 N. Franklin St., Chicago 10, Ill.

Identify as IEN - 0967

SIGNALING . . Bell rings, lamp lights, conveyor shuts down when a piece of tramp metal passes by the company's Universal electronic metal detector in a flow of material such as coal, rock, ore. Catalog E-42, 4 pages. Radio Corp. of America, 1941 Front & Cooper Sts., Camden 2, N. J.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

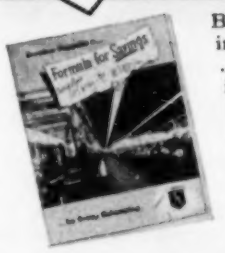
If you write maker identify as IEN - 14045

LAMPS

...via Graybar

There's no substitute for proper lighting . . . just as there's no substitute for dependable fluorescent and incandescent lamps made by General Electric and distributed by Graybar. For any lamp or lighting need, call your nearby Graybar office – they'll be glad to serve you.

FREE . . . Booklet gives formula for savings through group relamping



Booklet compares cost of Group Relamping with old-fashioned spot replacement . . . shows how you can save 60% or more in relamping labor costs right from the start. Send for your copy of "Formula for Savings" – a helpful guide to estimating savings in your plant. *Graybar Electric Company, Inc. Executive Offices: Graybar Building, 420 Lexington Avenue, New York 17, N. Y.*
386-1212

Call Graybar *first* for . . . Everything Electrical GraybaR ELECTRIC COMPANY

If you write maker identify as IEN - 14046

For Production Stud Setting, Drilling, Tapping and Assembly

Automatic Self-Opening Stud Driver — 100 Series

Automatic take-up for wear on jaws. Affords accurate maintenance of projection heights. Inexpensive method of clutch renewal gives double wear at half the cost.

Titan-Kirkland Combination Stud Driver and Puller

Incorporates roll action to grip as little as ½" of unthreaded body of stud. Made in T-Handle, Ratchet, and Power styles.

Solid Type Stud Driver

Built for rugged use on heavy engines. Equipped with Titan Design, Loose Pressure Plunger. Definitely stands up under vibration encountered when using an impact wrench for motive power.

Titan Quick-Change Chuck

Affords closest possible center to center set-ups, with quick change and positive drive included. Exclusive Slip Ring under tension a distinct advantage in turret lathe application.

WRITE FOR LITERATURE TODAY

TITAN TOOL CO.
Production Tools
52 Main St., FAIRVIEW (Erie County), PA.

If you write maker identify as IEN - 14047

Check Temperatures

Instantly... Accurately with Alnor TYPE 1500 PORTABLE PYROMETER

Wherever temperature readings are required—on the production line, in the laboratory or in the field—this sturdy precision instrument can bring you instant, accurate results.

Here's Why

It's Fast . . . in operation and quickly read. Precision movement designed to laboratory standards. Direct reading scale face is easily understood—no slide wires or conversion tables necessary.

It's Accurate . . . consistently to within ¾ of one percent under almost all variable conditions. Sturdy, protective case assures continued accuracy in toughest portable service. Ten scale ranges available, from 0-400° to 0-3000°F. Equivalent Centigrade scales available at no extra cost.

It's Portable . . . compact size, 6½"x6"x3", and light weight make this pyrometer highly portable and easy to use anywhere. Write today for complete details and prices. Illinois Testing Laboratories, Inc., Room 517, 420 N. La Salle Street, Chicago 10, Illinois.

Send for Bulletin on 1500 Pyrometer.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

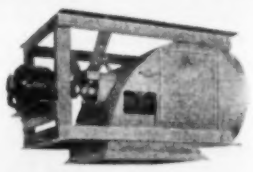
If you write maker identify as IEN - 14048

"...Let's cut this stack off here and put a WING DRAFT INDUCER on the boiler...

...We'll save the cost of the chimney, have better draft and a better looking building."

If you are building or rebuilding or increasing the size of your boiler plant, a costly, tall chimney can add considerably to the expense. And a well planned architectural design can be ruined with an unsightly, towering stack.

Wing Draft Inducers eliminate this problem, providing positive, adequate, uniform draft regardless of surrounding conditions, or variable weather. They cut operating costs, too, by giving higher CO_2's. Smoking is reduced or eliminated. Higher boiler capacity is possible.



Write for Bulletin I-52

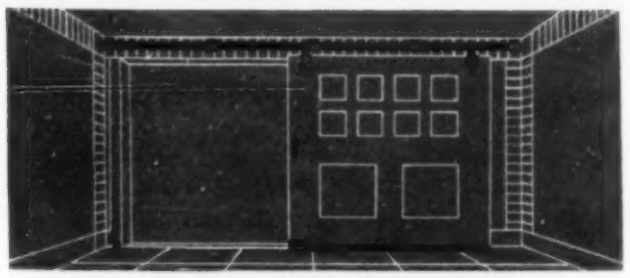
L. J. Wing Mfg. Co. 160 Vreeland Mills Rd., Linden, N. J.

If you write maker identify as **IEN - 14049**

COBURN

SLIDING DOOR HARDWARE

smooth, easy operation . . . trouble-free life for both new and remodeling jobs



For additional information, write to Sales & Engineering, 56 Sterling Street, Clinton, Mass. or consult your classified telephone directory.

THE COLORADO FUEL AND IRON CORPORATION—Denver and Oakland
WICKWIRE SPENCER STEEL DIVISION—Atlanta • Boston • Buffalo
Chicago • Detroit • New Orleans • New York • Philadelphia

2007

COBURN PRODUCTS
PRODUCTS OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION

If you write maker identify as **IEN - 14050**

FOURTH

AGA product announcement

in as many months.

Next month, watch for

another field-tested

development

of even more interest

NEW!

Compact, hermetically sealed

AGASTAT

trademark

TIME DELAY RELAYS

2⅛" square, 4" high. Weighs 1.2 lbs.

The SF AGASTAT is a solenoid operated, pneumatically-controlled time delay relay. It is hermetically sealed in an enclosure only 2⅛ inches square by 4 inches high. It weighs only 1.2 pounds.

Originally developed for aircraft use, the SF is ideal wherever control devices must operate in wet, corrosive, dusty or explosive atmospheres, and for applications involving shock, vibration or acceleration. It is not affected by freezing temperatures. Time delay range from approximately 30 milliseconds to more than one minute. Completely adjustable throughout this range.

Write for details and application engineering assistance.
Address Dept. A-10-122

A'G'A DIVISION

Elastic Stop Nut Corporation of America
1027 Newark Avenue, Elizabeth, New Jersey
Pioneers in pneumatic timing.

If you write maker identify as **IEN - 14052**

BINDING . . Hand operated machine applies adhesive tape to sheet edge

Source: GANE BROTHERS & LANE INC.
1337-43 W. Lake St., Chicago 7, Ill.

Clamps to table

Edgemaster, Universal Model, mounts a roll of adhesive tape and can be set to apply this tape flat on one face of a work sheet or to fold and apply it simultaneously on opposite faces. It will operate on sheets from one thickness of paper to ¼ inch. It can be specified for operation on fragile and breakable materials as well as those that will not break.

It is equipped to feed and apply self-adhesive tapes including cellophane, cellulose acetate, acetate fibre, cloth, paper, polyethylene, Vinyl, Mylar, polyester, glass fibre. It also will handle water activated gummed tapes including cloth, Holland, paper, artificial leather and leatherette.

Tape width can range from ¼ to 1 inch. The machine will apply flat strip from ¼ to ½ inch. A Junior Model, for pressure sensitive tape only, lists at $100. The Universal Model, for both types, lists at $125. Weights are 9 and 10 pounds.

If you write maker identify as **IEN - 14053**

CORROSION PROOFING . . Liquid sets to semi-hard lubricant coating

Source: BROOKS OIL CO.
932-36 Ridge Ave., Pittsburgh 12, Pa.

Details in Pamphlet 61

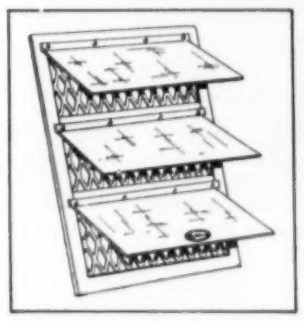
Barcote 600 is a new leaded petroleum compound for spray application on metal surfaces such as structural steel, sheet metal, railroad rails and joints, wire rope, metal work parts in storage. The material also can be brushed on. It sets to a semi-hard coating of pure lubricant with good penetration and adhesion.

The film expands and contracts without flaking, cracking, pulling away, blistering or failing. The liquid flows at 0 deg. F. It does not evaporate in storage, never dries hard and resists attack by salt water. It is soluble in petroleum solvents.

If you write maker identify as **IEN - 14054**

VENTILATING . . Back draft damper closes to prevent reverse air flow

Source: RITTLING CORPORATION
Rand Building, Dept. IEN, Buffalo 13, N. Y.



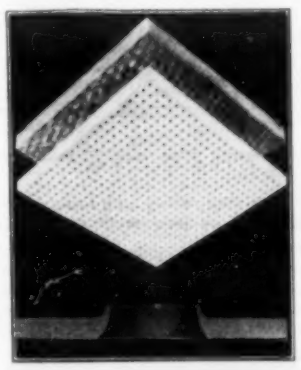
Bulletin RBDD-853

Non-metallic blades are mounted over screened openings in a metal frame in this new Silent back draft damper. The frame is mounted with a little incline to the rear, at the top, in a wall or horizontal duct. It is positioned horizontally, with the blades on top, to prevent vertical reverse movement. Two types differ only in the blades, one being heavier than the other for air velocities above or below 600 fpm. The damper is available in specified sizes. An assembly box also can be supplied.

If you write maker identify as **IEN - 14055**

INSULATING . . Perforated panel and glass fiber pad for use in ceiling

Source: TACH-FAST MFG. CO.
1053 Advocate Court Bldg., Lonaconing, Md.



Data on request

Formed steel panel, measuring 12 by 12 in., is perforated to present round edge orifices on the bottom face and small shoulders on the top inner face. The panel is made of terne-coated steel and then is finished with a baked-on facing that can be washed, painted and repainted without impairing the acoustical properties.

There are 529 perforations in each panel. They permit noise to move through the metal where it is absorbed by the glass fiber pad. The rounded corners of the perforations will not scrape water from a sponge or cloth during cleaning. The small ridges on the top face prevent back flow of water that does penetrate.

Special panels are available for access to the space above the ceiling. Channels and fittings are supplied for erection. Terne-Coustic is the trade name.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 14056**

HEAT INSIDE spotted where you need it

FUMES OUTSIDE where they belong

SAFE
HERMAN NELSON
PORTABLE AIR HEATERS

Get safe heat, efficient heat, wherever you want it. Say goodbye to winter slowdowns with Herman Nelson Portable Air Heaters. There is absolutely no danger from carbon monoxide, no smoke, no fumes, no sparks. Combustion products are vented off—clean, pure, heated air is directed to the working area—through flexible canvas ducts. Models available from 125,000 to 450,000 BTU. Oil or gasoline fired. Electric or gasoline powered.

Get all the FACTS about ALL Portable Heaters. Write American Air Filter Company, Inc., Dept. 105, Moline, Illinois.

If you write maker identify as **IEN - 14057**

NOW . . .

Photo-exact copies on ordinary paper

The Kodak Verifax Printer is sensationally different . . . lets you make 3 copies of a letter in 1 minute. And you make your copies on ordinary paper instead of on specially treated papers . . . using only one sheet of sensitized Verifax Matrix Paper.

As a result, you can copy letters, charts, records *faster, more economically*—3 copies of a letter cost less than 4 cents apiece.

The only equipment needed is the typewriter-size Verifax Printer shown above. *It's designed for every office* . . . can be placed where the paper work is heaviest . . . operated by *anyone* under present lighting. *And it's priced for every office—only $240* . . . quickly pays for itself by eliminating costly retyping, proofreading . . . and enabling you to dispatch legible black-on-white copies immediately.

Verifax copying saves wherever there's paper work

No other process is as handy as Verifax copying. It will pay you to mail this coupon today for free booklet giving full details.

Eastman Kodak Company
Industrial Photographic Division
Rochester 4, N. Y.

69

Gentlemen: Please send free Verifax booklet and names of near-by dealers.

Name_____

Company_____

Address_____

City_____ State_____

Price quoted is subject to change without notice.

Kodak
TRADE-MARK

If you write maker identify as IEN - 14059

Famous Holes

H & K
Perforated Holes

Years and years ago, Santa made the chimney hole famous—tho for only one night each year. For more than 70 years H & K Perforated Holes have spread their benefits thru every day of the year for savings and greater efficiency in industrial processing requiring cleaning, sizing, filtering and straining—for ventilating, guarding and decorating — for the escape of sound, light and air and thousands of other uses.

We have, thru these many years, built tools with which to perforate practically any pattern you may require — in any of the metals, plastics, plywood or other materials available in coil, sheet or plate form.

From stock, we offer you many patterns of round holes and slots in steel, tinplate and brass—and ornamental patterns in steel.

Remember — "If it can be perforated H & K can perforate it!"

The Harrington & King Perforating Co.

Ask for catalog No. 62 for complete information

5637 Fillmore Street, Chicago 44, Ill.
114 Liberty Street, New York 6, N. Y.

If you write maker identify as IEN - 14060

BALL BEARING JOURNAL JACKS

● Low closed height (10 to 16 inches), and from 5 to 8 inches of lift mean that this handy jack can do a lot of jobs for machinery movers, builders, railroads, etc.

● Ball bearing-smooth operation, but plenty of lift capacity—15, 25, 35 or 50 tons!

● Simple, rugged and compact design. Sealed against dust and dirt, and all working mechanism is packed in grease and enclosed.

● Accurate control of load at all times, and load can be held at any height.

Write for new Bulletin 1515-B and details on BUDA's complete line of mechanical and hydraulic jacks.

"A jack for every job"

BUDA

THE BUDA COMPANY • Harvey, Illinois

If you write maker identify as IEN - 14061

THIS Free SAMPLE KIT

CMD ANTI-SCORING LUBRICANT

Will show you how to:

• Increase your production
• Prevent scoring and seizing
• Protect bearing surfaces better

Here is a free sample kit of CMD Anti-Scoring Lubricants, designed for *your* use on *your* machines so that you can see how it will help increase production by preventing costly shutdowns. Also CMD lubricants positively prevent seizing, galling, scoring and are non-corrosive. Any bearing surface is absolutely protected with CMD. Send for your free kit and use CMD on lathe centers, steady rests, cams, taps and in many other applications where positive lubrication is demanded under high pressures. Do it today and see if you don't think CMD is tops!

Use it for
LATHE CENTERS
DIE SET POSTS
MACHINE WAYS
THRUST BEARINGS
CAMS—DIES—TAPS
GRINDING CENTERS
MILLING MACHINES

FREE SAMPLE KIT

Please send, under no obligation to me, Free Sample kit No. 312 containing CMD Lubricants.

Name _____
Company Name _____
Address _____
City _____ State _____

Chicago Manufacturing and Distributing Company
1904 West 46th St., Chicago 9, Illinois

CHICAGO MANUFACTURING & DISTRIBUTING CO.

NEW LITERATURE—Continued

Identify as IEN - 0968

SIGNS . . Decal transfer signs for company, brand or product names on stores, trucks and similar locations. Color examples and available facilities in 20-page "Advisor Booklet", letterhead request please. Meyercord Co., 5321-25 W. Lake St., Chicago 44, Ill.

Identify as IEN - 0969

SPEED REDUCERS . . 84-page Catalog 42-B on right-angle speed reducers with spiral-bevel gears in standard, herringbone, planetary designs, has rating selection data. D. O. James Gear Mfg. Co., 1126 W. Monroe St., Chicago 7, Ill.

Identify as IEN - 0970

STORING . . Pallet loads of crushable materials can be stored one above the other by means of the company's post-equipped pallet. Details and applications are in 16-page "Paltier System" bulletin along with racks. Paltier Corp., 1703 Kentucky St., Michigan City, Ind.

Identify as IEN - 0971

SUPERCHARGERS . . To step up power of gasoline or diesel engines with ratings of 100 to 750 hp., also for use as blower or compressor 15 to 4,000 cfm. at pressures of 2 to 15 lb. gage. Bulletin 153, 4 pages. Miehle-Dexter Supercharger, 102 N. 4th St., Racine, Wis.

Identify as IEN - 0972

SWITCHES . . Rotary, toggle, pushbutton, tapping switches intended primarily for thermocouple service are reviewed in 12-page Catalog Section EU. Leeds & Northrup Co., 4934 Stenton Ave., Philadelphia 44, Pa.

Identify as IEN - 0973

TEST LABORATORY . . Put your test facilities on wheels, urges new 12-page Bulletin FS-232 on the company's Mobilab. It tells how the truck-mounted laboratory assembles from standard units for general, petroleum, metallographic service. Fisher Scientific Co., 719 Forbes St., Pittsburgh 19, Pa.

Identify as IEN - 0974

FLAW TESTING . . Magnetic equipment will detect and locate flaws and defects in ferromagnetic bar, rod and tubes by a non-destructive operation. Examples are illustrated in 8-page Bulletin 10. Magnetic Analysis Corp., 42-46 Twelfth St., Long Island City 1, N. Y.

Identify as IEN - 0975

PIPE THREADING . . Power drive unit for pipe threading and cutting has an aluminum housing. It and cutting tools, nipple chuck, are shown in 4-page Folder, NU-953. Beaver Pipe Tools Inc., 324 Dana St. N. E., Warren, Ohio

Identify as IEN - 0976

TRANSFORMERS . . Technical data sheets are a feature of new 16-page looseleaf catalog on air-cooled transformers to 1,000 kva. These sheets tell how to apply a transformer in combinations for light or power, such as two single-phase units from three-phase supply. Precision Transformer Corp., 658-62 W. Grand Ave., Chicago 10, Ill.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14062

THE PROBLEM

How to weigh large castings conveniently and accurately.

This 35 ton steel casting was easily weighed by placing three Baldwin SR-4 Load Cells under it.

THE BALDWIN SOLUTION

Baldwin SR-4 devices enabled a large Eastern foundry to weigh faster and more accurately this huge semi-rotor, built for a Canadian hydro-electric plant. Three 50,000 lb. SR-4 Type C Load Cells were used. Output of each cell ran to an SR-4 manual null-balance indicator. Here each cell was read separately and totalled; other cases might better use an SR-4 weighing system electrically adding cell outputs.

Baldwin SR-4 devices have *uses unlimited* in industry . . . measuring load, pressure or torque economically, speedily and accurately. For latest technical information write to Dept. 3113, Baldwin-Lima-Hamilton Corporation, Philadelphia 42, Pa.

TESTING HEADQUARTERS

BALDWIN-LIMA-HAMILTON

General Offices: Philadelphia 42, Pa. • Offices in Principal Cities

If you write maker identify as IEN - 14063

PROBLEM:

Dependable Circuitry

SOLUTION:

Leach RELAYS

The efficient performance of *Leach Relays* is always at work delivering dependable, crisp, circuit control, infinite versatility and maximum potentials for use. Here at *Leach* you will find complete engineering, testing and production facilities to help you solve your relay problems.

FOR BETTER CONTROLS THROUGH BETTER RELAYS
—Specify Leach

LEACH RELAY CO.

5915 AVALON BOULEVARD, LOS ANGELES 3, CALIFORNIA
Representatives in Principal Cities of U. S. and Canada

If you write maker identify as IEN - 14064

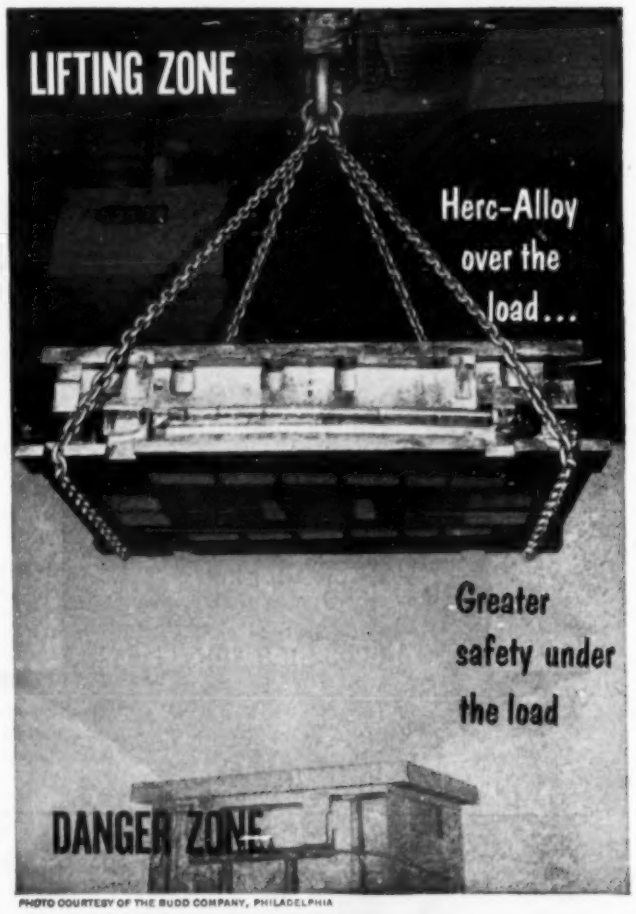


PHOTO COURTESY OF THE BUDD COMPANY, PHILADELPHIA

SPECIFY

HERC-ALLOY

SLING CHAINS

Write for Data Book

Herc-Alloy Sling Chains bring you many advantages. First and foremost...they offer maximum protection to men and materials. Secondly, their special alloy steel, processed by men with unmatched heat treatment know-how, gives long life and economy. Third, they weigh less (without any sacrifice in tensile strength) and are far easier for workmen to handle. That's why so many well-known plants are switching to Herc-Alloy Sling Chains.

HERC-ALLOY ...is the original alloy steel chain

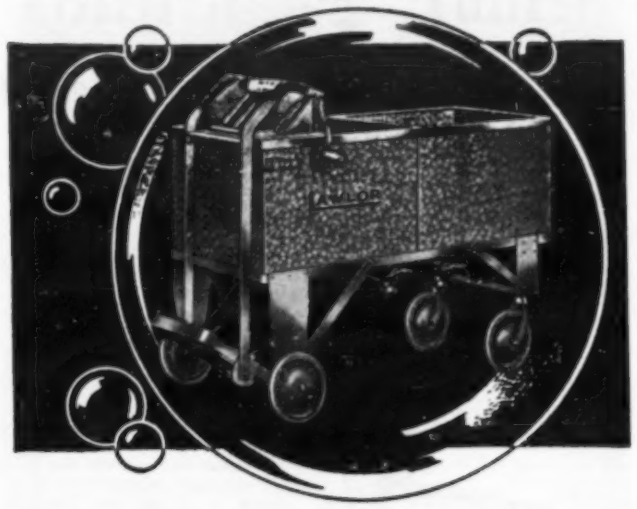
COLUMBUS McKINNON
CHAIN CORPORATION
TONAWANDA, NEW YORK
DISTRICT OFFICES: NEW YORK, CHICAGO, CLEVELAND

In Canada: McKINNON COLUMBUS CHAIN LIMITED, ST. CATHARINES, ONT.

If you write maker identify as IEN - 14066

LAWLOR MOPPING TANKS

Lead the Field in Ruggedness and Service



8 styles and sizes of all steel, acetylene welded tanks • 2 or 3 compartments • 30, 60 or 65 gallon capacities • hand or foot pressure wringers • perforated roll wringers • special drain shut-offs • hot dipped, galvanized chassis and frames • rubber tired, cadmium plated steel wheels.

Write for Catalog of Mopping Tanks, Wringers, Floor Scrub Wax-Polishing Machines for every kind and size of floor

S. C. LAWLOR CO. *Quality Floor Equipment for 50 Years*

120 North Aberdeen Street • Chicago 7, Illinois

If you write maker identify as IEN - 14067

CHICAGO PIPE BENDERS

for hand use on the job

Any arc or offset

No. 1
takes
½"-¾"1" pipe
on
4", 8" and 11" diam.

No. 2
takes
1¼" and 1½" pipe
on
14" and 17" diam.

Sets up anywhere — one man operation — weighs 85 and 115 lb. with stand

Data and prices in illustrated literature

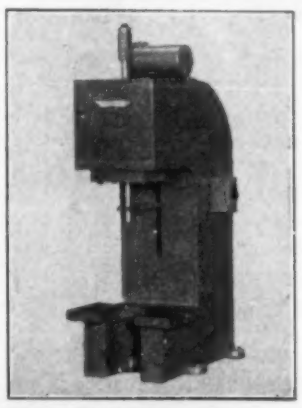
GUSTAVE LIDSEEN, INC.

840 S. Central Ave. Chicago 44, Ill.

If you write maker identify as IEN - 14068

AIR-HYDRAULIC PRESS

Two models deliver 2½ and 5½ ton from a 100-lb. shop air line



Multiplies pressure 50 and 110 times

This press provides controllable hydraulic action for forming, flanging, marking, riveting, broaching, crimping, staking. It operates under effortless valve or pushbutton control. Stroke length is a little over 5 and 6 inches. Adjustment is through 2 inches. Throat is 6¼ inches. Base measures 9½ by 18 inches and 11 by 21 inches.

1953 Catalog on request

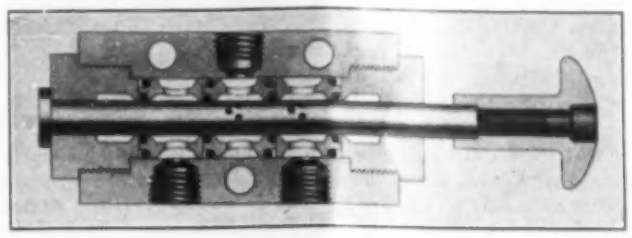
AIR-HYDRAULICS, INC.

809-13 Belden St. Jackson, Mich.

If you write maker identify as IEN - 14069

VALVE . . Two to five way design, controls air or liquid to 125 pounds

Source: C. B. HUNT & SON
1919 E. State St., Salem, Ohio



Patent 2,645,450

The plunger in the center of this new operating valve is a hollow unit with drilled ports. It is made of stainless steel, ground and polished. It rides inside an assembly of spacers fitted with O-rings. The spacers are held in place with gland nuts at the two ends. There is no mechanical pressure on the O-rings. The parts are in pressure balance.

The valve is available with ⅛ or ¼-in. pipe connections for pneumatic or hydraulic service at pressure to 125 lb. and temperature to 150 deg. F. It also will handle vacuum. Designs include manual and power operation.

If you write maker identify as IEN - 14070

SEALING . . Plastic web coating is applied with a pneumatic spray gun

Source: PRESSTITE ENGINEERING CO.
3911 Chouteau Ave., St. Louis 10, Mo.

Adheres to steel and aluminum

Cobwebbing Sealer No. 200 is a new coating material developed particularly for use, in automobile construction, as a water and dust tight seal on inside door panels at hinge and latch assemblies. The material will bridge cracks and holes measuring an inch across.

The coating forms a continuous film or a coarse cobweb-like skin depending on the spray nozzle opening and the distance the gun is held from the surface. It is resistant to attack by oil, naphtha and aromatic fuels. It is supplied as a fairly viscous liquid of translucent cream color. It dries on contact.

If you write maker identify as IEN - 14071

LADDER . . Made of magnesium in sizes from 4 to 20 ft. in height

Source: WHITE METAL ROLLING & STAMPING CORP.
376 Lafayette St., Dept. IEN, New York 3, N. Y.

Strong and light

Illustrated is a typical assembly in the company's new line of Superlight magnesium ladders. It is made of extruded magnesium in channel section. Each step is riveted in place and braced. The steps themselves are designed to prevent slipping. The uprights carry rubber feet. A bucket rack completes the assembly.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14072

NEW PRESS BRAKE

IN TWO SIZES
6 FT. and 8 FT.
•
LOW PRICED
•
BIG PRESS FEATURES

- Buttress Threads in revolving bronze nut with release grooves to prevent jamming.
- One Piece Construction (welded, normalized, machined in one piece).
- Ball and Roller Bearings throughout.
- Fine adjustment.

Made by the makers of famous SEMCO "34 YEAR" BRAKE DIES.

Write for NEW color folder and prices of PRESS BRAKES and 26 standard BRAKE DIE designs. Send die specifications for estimate.

SEMCO

SERVICE MACHINE CO., INC.

200 Miller Street • Elizabeth 4, N. J.

If you write maker identify as IEN - 14073

space saving HV FILTER has longer life greater efficiency

today's best buy is better air!

AAF's new High Velocity filter handles the same air volume in ⅓ the space of standard unit filters. It operates effectively at velocities from 300 to 500 fpm and maintains uniform efficiency over this wide range of velocities. It's the exclusive *pyramid pocket* filtering media that makes the difference!

The H-V's low resistance, large dust capacity and longer life make it a superior unit for limited space conditions.

Available in all standard sizes and 1", 2" and 4" depths. Engineering Bulletin #203 gives complete information and technical data. Write for it today.

AAF American Air Filter COMPANY, INC.

335 Central Avenue, Louisville 8, Ky.
American Air Filter of Canada, Ltd., Montreal, P. Q.

If you write maker identify as IEN - 14074

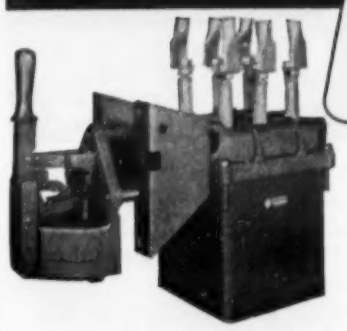
Yes, B&W Kaocast is versatile. This 3000F refractory castable speeds repairs . . . eliminates need for large inventory of special shapes. Discuss easy-to-use Kaocast with your B&W Refractories Engineer.

THE BABCOCK & WILCOX CO.

Refractories Division
GENERAL OFFICES: 161 EAST 42nd ST., NEW YORK 17, N. Y
WORKS: AUGUSTA, GA. R-418

If you write maker identify as IEN - 14075

Full Protection for Industrial Electric Service



ALLIS-CHALMERS INDOOR OIL CIRCUIT BREAKERS

Type E-47 oil circuit breaker rated 4160 volts, 600 amp, 25,000 kva interrupting capacity.

A COMPLETE LINE of indoor oil circuit breakers for 2300 to 13,800-volt service, up to 500,000 kva interrupting capacity is offered by Allis-Chalmers. These circuit breakers combine simplicity of design with reliability of performance. Each breaker is thoroughly tested before shipment. You can choose from a variety of mountings and accessories for automatic or manual operation.

Get complete information on the breaker for your requirements from your nearest A-C sales office, or write Allis-Chalmers, Milwaukee 1, Wisconsin.

A-3630

ALLIS-CHALMERS

If you write maker identify as IEN - 14076

JENKINS VALVES for Safety and Economy in L.P.G. SERVICES

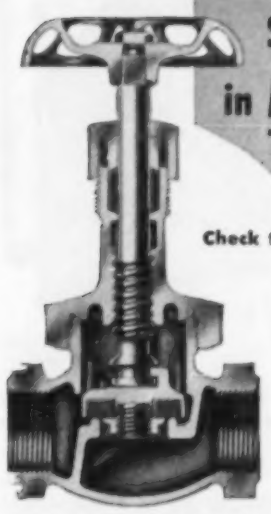


Fig. 506 BRONZE GLOBE for L.P.G. SERVICE 400 lbs. O.W.G.

Check these special design features

- **Extra heavy, reinforced body** — takes all ordinary pipe strains; provides a safety factor far above any L.P.G. service needs.
- **Crowned seat** — insures positive tightness, meets N.B.F.U. test of 500 p.s.i. under seat when valve is closed.
- **Improved composition disc** — meets every test of L.P.G. service.
- **Deeper packing box** — and spiral, lubricated packing material permit spindle to turn with minimum friction.
- **All other parts specifically designed** and proportioned to meet rigorous requirements of critical L.P.G. service.

Construction features of Jenkins Fig. 507 Check and Fig. 508 Angle L.P.G. Valves same as for above.

Ask your Jenkins Distributor for the new Jenkins L.P.G. Valve folder, or write: Jenkins Bros., 100 Park Ave., New York 17.

LOOK FOR THIS JENKINS TRADE MARK DIAMOND MARK

JENKINS VALVES

SINCE 1864

If you write maker identify as IEN - 14077

3 reasons why DeLuxe Steel Shelving costs you less

The real cost of shelving is the erected cost

1. **Fewer Parts**—DeLuxe has designed one part where ordinary shelving uses three. Example, our bin-type "I-Beam" upright. *Fewer parts mean fewer man hours to install.*
2. **80% Less Bolts**—DeLuxe shelving uses patented, boltless shelf brackets, thus requires *no tools* for either installation or adjustment.
3. **100% Adjustable**—Shelves in each section are independently adjustable, without disturbing other contents. DeLuxe shelving erects on the spot, in position where you want it . . . the only shelving that does all this.

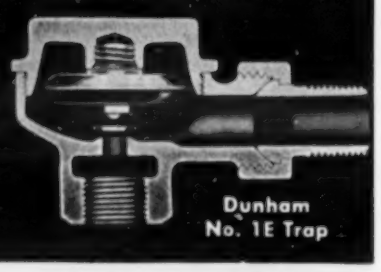
There is a DeLuxe factory representative in your area who will give you our engineering, planning and layout service without obligation. Write today for free catalog.

DELUXE METAL FURNITURE CO.
303 Struthers St., Warren, Pa.

For over 25 Years Manufacturers of: Storage Shelving
Library Shelving • Storage Cabinets • Shop Equipment

If you write maker identify as IEN - 14078

Why you can't clog DUNHAM RADIATOR TRAPS



Dunham No. 1E Trap

You can tell at a glance why this Dunham Radiator Trap always assures easy passage of air, water, foreign matter.

Note, for instance, the extra-large, non-clogging valve seat opening—unrestricted by any guide. Also, that there are *no bellows to clog or stick.*

Dunham's factory-set Monel metal thermostatic disc with stop shoulder construction assures correct operation *without* field adjustment. Sealed under high vacuum, it gives positive response to temperature and pressure changes.

Made in 3 sizes; 6 patterns; 200 to 700 EDR.

For all the facts WRITE FOR BULLETIN IEN-12.

DUNHAM HEATING SYSTEMS AND EQUIPMENT
Quality First for Fifty Years

C. A. DUNHAM COMPANY, 400 W. Madison St., Chicago 6, Illinois

NEW LITERATURE—Concluded

Identify as IEN - 0977

TUBE FITTINGS . . Stainless-steel welding fittings for light-gage o.d. stainless tubing in sanitary and corrosion-resisting service. Sizes from ¾ to 4 in. in stock, to 36 in. on order. Catalog 753, 20 pages. Tri-Clover Machine Co., 2807-11 60th St., Dept. IEN, Kenosha, Wis.

Identify as IEN - 0978

VALVES . . Globe, angle, gate and check valves to use with liquid petroleum gas at pressures to 250 lb. and temperature range of minus 50 to plus 180 deg. F. Folder V-110, 4 pages. Fairbanks Co., 393 Lafayette St., Dept. IEN, New York 3, N. Y.

Identify as IEN - 0979

NEEDLE VALVES . . For instrument, vacuum, high-pressure gas and corrosive service, also gas-pressure regulators, accessories, gages, flow indicators. Flow curves for air and water, dimensions, specifications, compressed-gas cylinder thread data and precautions are in 66-page Catalog 2. Hoke Inc., 203 S. Dean St., Englewood, N. J.

Identify as IEN - 0980

OPERATING VALVES . . Pneumatic and hydraulic types are designed so the higher the pressure, the tighter the seal. Actuation means can be lever, pedal, solenoid, cam, diaphragm, pilot cylinder. "Quick-as-Wink" Bulletin 531, 12 pages. C. B. Hunt & Son Inc., 1919 E. State St., Salem, Ohio

Identify as IEN - 0981

REGULATING VALVES . . Float and lever types in balanced single-seat design, sizes ½ to 12 inches. Capacity charts and accessories in 16-page Catalog 107. Schade Valve Mfg. Co., 2531 N. Bodine St., Philadelphia 33, Pa.

Identify as IEN - 0982

VIBRATING . . Pneumatic vibrators in metallic-contact and air-cushioned designs to use on bins, hoppers and foundry shakeouts. An inquiry form in 16-page Catalog 109 enables you to make a request for information at no charge. Cleveland Vibrator Co., 2736 Clinton Ave., Cleveland 13, Ohio

Identify as IEN - 0983

WATER TREATING . . Ion-exchange industrial water softeners are offered in resin, zeolite, greensand types. Capacity tables in Illco-Way Catalog S-105, 8 pages. Illinois Water Treatment Co., 891-95 Cedar St., Rockford, Ill.

Identify as IEN - 0984

WELDING . . Transformers for resistance welder machines from 30 to 60 kva., also flexible air-cooled jumpers from 400 to 1,000 mcm. to connect movable electrodes and other electric terminals. "Cut Down-Time", 4 pages. Multi-Electric Co., 407-11 River St., Port Huron, Mich.

Identify as IEN - 0985

WOOD WORKING . . Shapers, circular saws, drill presses, jointers, sanders, lathes, band saw and filing machine, together with a line of accessories and motors, cutters and tools, are covered in 52-page Catalog 53. Boice-Crane Co., 926 Central Ave., Toledo 6, Ohio

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14079

MODERN AS TOMORROW!

CAT. NO. B-2-S

This is the EXECUTIVE by LINEMASTER®
America's Foot Switch Leader

PRICE ONLY $6.50 list less discount
Size 4" x 4⅝" x 1¼". Weight 14 ounces

- The Executive incorporates two switches in one, with selective circuits and guaranteed mechanical interlock. Its sleek low-to-the-floor design enables easy and comfortable on-center pivot action; only one circuit can be operated at one time—preventing accidental tripping of two circuits.
- It's the Electrician's dream—only one screw to remove and the switch is ready for wiring.
- Engineers will want to incorporate the Executive by Linemaster into their plans when designing their modern machines.
- Rating (each interior): Single Pole—Double Throw. 20A @ 125V—15A @ 250V

Write for Descriptive Bulletin

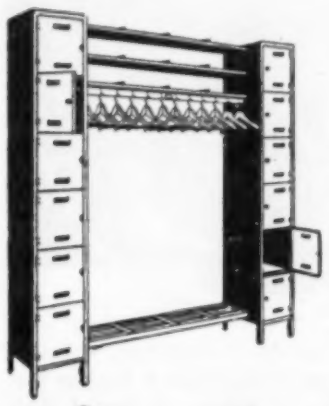
LINEMASTER SWITCH CORP.
426 WOODSTOCK TERRACE • WOODSTOCK, CONNECTICUT

If you write maker identify as IEN - 14080

VALET RACKS

Lockerette KEEPS WRAPS "in press"

improves health and morale — lowers absenteeism



Wraps are exposed to air and light. Employees do not face the weather in damp wraps that have been crumpled in dark lockers—do not eat soggy lunches, soaked by wet hats or gloves. Each person has his own spaced coat hanger, ventilated hat shelf and 12" x 12" x 15" deep lock box for lunches, tools and personal effects. Lockerettes save space too . . . the No. 6-12 (illustrated) accommodates 12 people in 6 feet; the No. 9-18 (3-pedestal) accommodates 18 in 9 feet.

Write for Bulletin OL-5

VOGEL-PETERSON CO.
1121 West 37th St. • Chicago 9, Ill.

If you write maker identify as IEN - 14081

OUR DEEPEST SYMPATHY

TO PLANTS HAVING TROUBLE CONVEYING ANY OF THE FOLLOWING CHEMICALS:

Acetone • Acetyl Bromide • Benzine • Benzol • Butyl Acetate • Carbon Tetrachloride • Caustic Soda • Ether • Ethyl Acetate • Ethylene Dichloride • Isopropyl Acetate • Kerosene • Mineral spirits • Naphtha • Methyl Isobutyl Ketone • Toluol • Trichlorethylene • Xylol

Cobonol does the impossible

TRANSLUCENT flexible plastic tubing made of virgin Polyethylene. Good for practically every known chemical including Ketones, Esters and Hydrocarbons.

Immediate delivery from stock on sizes from ⅛" to 2" I.D.

WRITE FOR INFORMATION AND FREE SAMPLE.

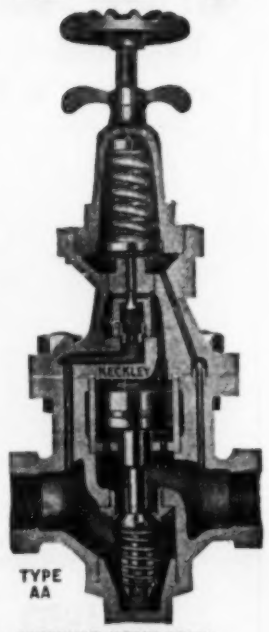
COUSE & BOLTEN CO.
43 Lafayette Street Newark 2, N. J.

If you write maker identify as IEN - 14082

KECKLEY pressure regulators

Designed for better control at less cost

When your specifications call for pressure regulators for steam or air service, you want accurate control of reduced pressures which you can depend on, day in and day out. You also want low maintenance, and long service for greatest possible economy. Our years of experience in building precision regulators assures you of getting these advantages. Ask your Keckley representative or your industrial distributor about the correct regulator for your job!



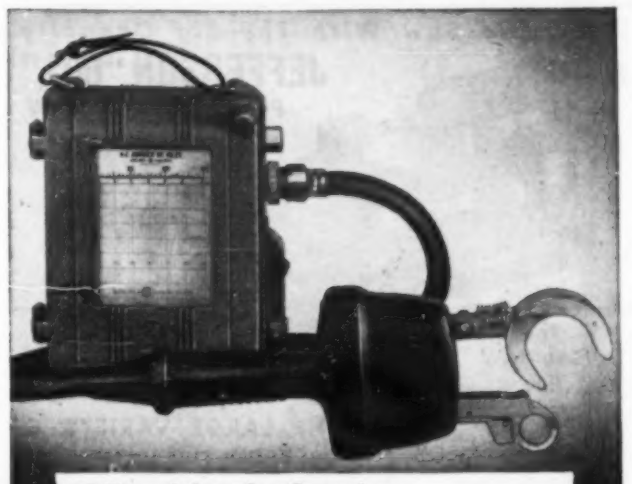
TYPE AA

Send for Catalog 53-E with Complete Information on Keckley's Complete Line

- RELIEF VALVES
- FLOAT BOXES
- SOLENOID VALVES
- BALANCED VALVES
- FORGED STEEL GAUGES
- MOTOR OPERATED VALVES
- PRESSURE REGULATORS
- TEMPERATURE REGULATORS
- PUMP GOVERNORS
- FLOAT VALVES
- POP SAFETY VALVES
- STRAINERS

O. C. KECKLEY COMPANY
400 West Madison Street • Chicago 6, Illinois

If you write maker identify as IEN - 14083



Offered for the first time:

New G-E Hook-on Recorder

- Records alternating current without interruption of service; easy voltage recording
- Fast hook-on installation in/outdoors
- Transformer insulated to 8700 volts
- Accurate to 3% (4% above 625 amperes)
- Ranges—150/300/750v; 15/75/150/750a

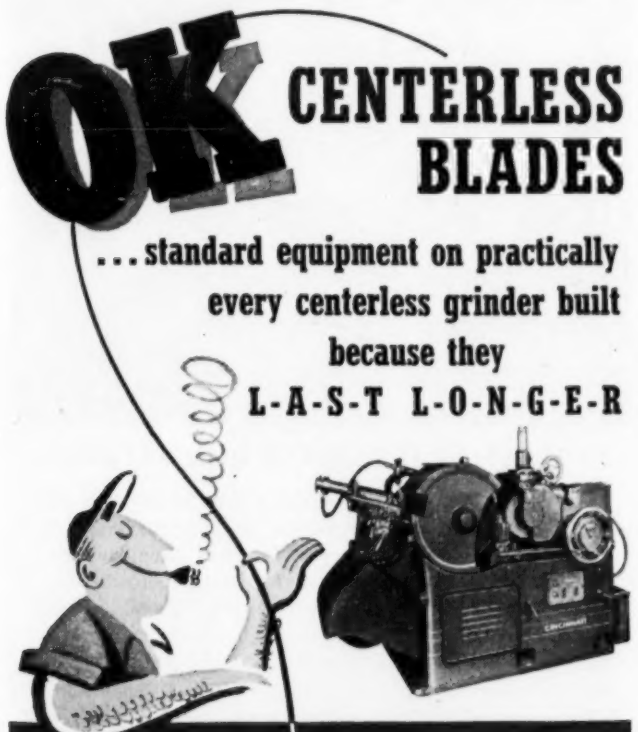
For details, contact your G-E Apparatus Sales Office—and see the CF-7 recorder at the Plant Maintenance and REA shows in January. General Electric Co., Schenectady 5, N. Y. 602-271

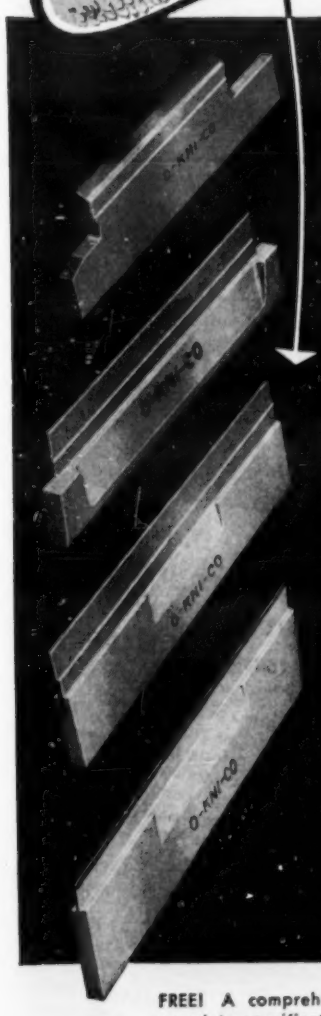
GENERAL ELECTRIC

If you write maker identify as IEN - 14084

OK CENTERLESS BLADES

...standard equipment on practically every centerless grinder built because they L-A-S-T L-O-N-G-E-R





The phenomenal long life of Ohio Centerless Work Blades and Guides is due to their extreme hardness, high finish and close tolerances. Long blade life means high production resulting in lower costs.

Made of tungsten carbide, high speed steel, cast alloy or iron. Non-metallic tips available upon request.

In addition to standard blades, special contours, angles or shapes are made to your blue prints.

Manufacturers for the Metal Working Industry of

- Hardened Spacers
- Hardened Ways
- Gibs
- Ball Races
- Slitter Knives
- Shear Blades
- Rotary Shear Knives
- Bronze Ways
- Wear Strips

GO WITH OHIO GREEN

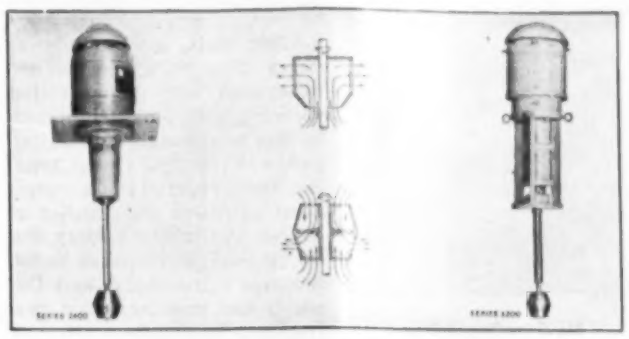
FREE! A comprehensive bulletin with complete specifications. Write Dept. J.

THE OHIO KNIFE CO.
CINCINNATI 23, OHIO

If you write maker identify as IEN - 14086

MIXING .. Motor driven rotor combines liquid mixing and shearing

Source: PREMIER MILL CO.
218-N Genesee St., Geneva, N. Y.



Action is smooth, fast, thorough

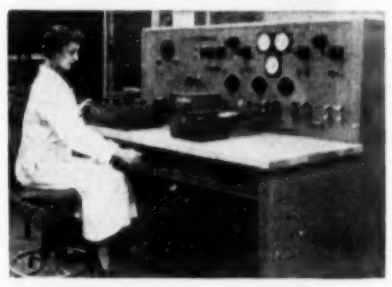
Two new units, Series 2400 for open tank channel mounting and Series 3200 for closed tank flange assembly, have been added to the company's line of motor driven equipment, previously described IEN-1617-52. Both are designed to operate in the 30 to 300-gal. batch range. Construction includes flexible motor couplings, factory lubricated permanently sealed ball bearings, welded or cast support frames. The rotor drive shaft is demountable after releasing a chuck on the Series-2400 unit. The shaft is fixed in the other.

Dispersator trade names the special rotor design. It sets up centrifugal action, as it revolves, to draw liquid into its open ends and to force it out through shearing slots under considerable pressure. Two basic rotor designs provide single and double action as shown in the illustration.

If you write maker identify as IEN - 14087

TESTING .. Standardizing console for electric instrument servicing

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.



Operates on 110 volt ac.

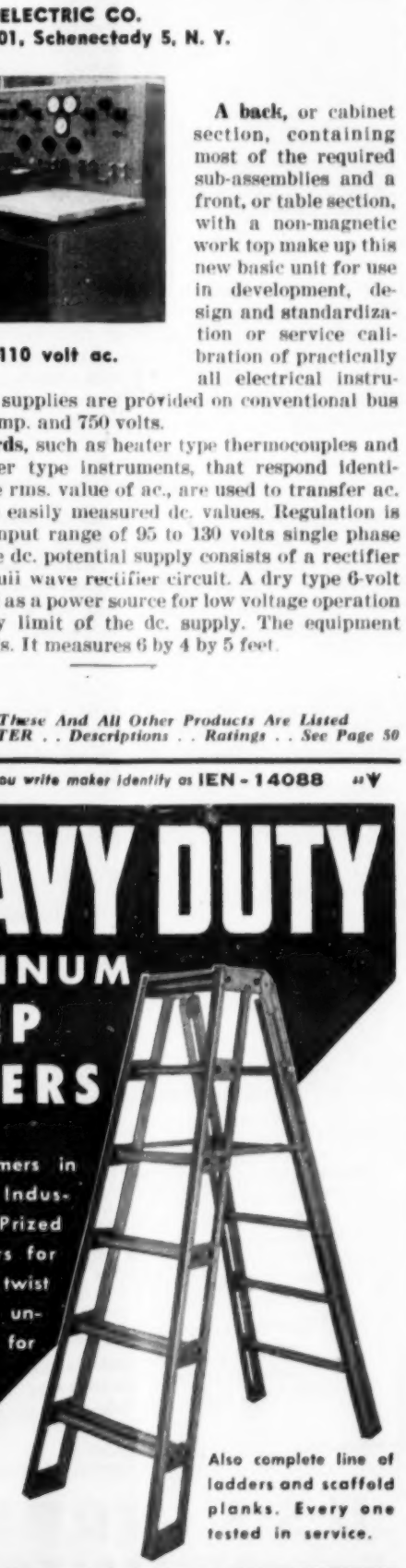
A back, or cabinet section, containing most of the required sub-assemblies and a front, or table section, with a non-magnetic work top make up this new basic unit for use in development, design and standardization or service calibration of practically all electrical instruments. Ac. and dc. supplies are provided on conventional bus circuits up to 150 amp. and 750 volts.

Transfer standards, such as heater type thermocouples and electro-dynamometer type instruments, that respond identically to dc. and the rms. value of ac., are used to transfer ac. values to the more easily measured dc. values. Regulation is obtained over an input range of 95 to 130 volts single phase 50 to 60 cycles. The dc. potential supply consists of a rectifier and filter with a full wave rectifier circuit. A dry type 6-volt battery can be used as a power source for low voltage operation below the stability limit of the dc. supply. The equipment weighs 1,300 pounds. It measures 6 by 4 by 5 feet.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14088

HEAVY DUTY ALUMINUM STEP LADDERS



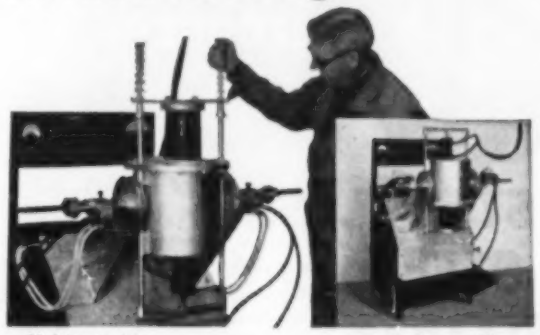
Proven performers in all types of industrial plants. Prized by Contractors for resistance to twist or wobble. An unexcelled value for heavy service.

Also complete line of ladders and scaffold planks. Every one tested in service.

LOUISVILLE LADDER COMPANY
1101 W. Oak St. — Dept. 8A — Louisville 10, Ky.

If you write maker identify as IEN - 14089

Direct-casting Electric Furnace for better, faster precision investment casting



Melting position *Casting position*

The new, type IC, 12 kw., 10-lb. Detroit Electric Furnace melts and pours heats of chrome-nickel, Stellite or superalloy steels in 9-12 minutes. Casting is done by inverting the furnace, pouring directly into the investment mold which is held in place by air pressure. Melting by fast, controlled, indirect arc minimizes carbon pickup and alloy variation. Simple, efficient operation is ideal for high production of precision castings.

Write for complete information.

DETROIT ELECTRIC FURNACE DIVISION
KUHLMAN ELECTRIC COMPANY
1050 26th St. • BAY CITY, MICHIGAN

Foreign Representatives: In BRAZIL—Equipamentos Industrias, "Eiso" Ltd., Sao Paulo; CHILE, ARGENTINA, PERU and VENEZUELA: M. Castellvi Inc., 150 Broadway, New York 7, N. Y.; MEXICO: Cia Proveedora de Industrias, Atenas 32-13, Apartado 27A3, Mexico 6, D. F., Mexico; EUROPE, ENGLAND: Birlec, Ltd., Birmingham.

If you write maker identify as IEN - 14090

NEED SPRING MATERIALS WITH HIGH CONDUCTIVITY?

General Plate Composite Metals BRONCO, CONFLEX and SILVER-CLAD PHOSPHOR BRONZE meet all requirements

These General Plate composite metals, made by metallurgically bonding one metal to another, provide an economical solution to your electrical spring problems.

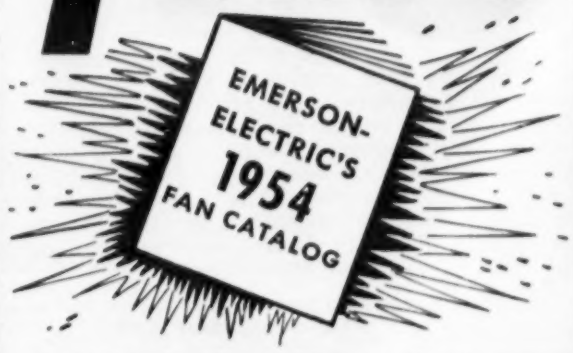
Each has specific physical and mechanical properties that make it better suited for certain applications. For instance, Bronco permits miniaturization, because you can reduce spring size without sacrificing conductivity. Conflex enables you to make fuse chips, flat springs, and electrical connectors at a lower cost.

Write for complete information and Catalog PR700 today.

METALS & CONTROLS CORPORATION
GENERAL PLATE DIVISION
712 Forest Street, Attleboro, Mass.

If you write maker identify as IEN - 14091

yours

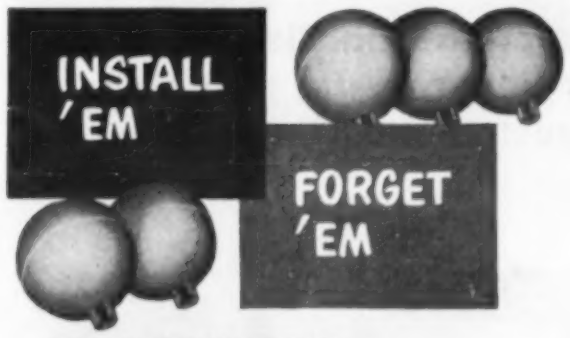


Again this year Emerson-Electric offers the most complete fan line in America . . . fans for a wide variety of commercial, industrial and institutional uses. See them all in the new 1954 fan catalog. Write today for Catalog No. 752.

THE EMERSON ELECTRIC MFG. CO.
St. Louis 21, Mo.

EMERSON ELECTRIC
FANS • MOTORS APPLIANCES

If you write maker identify as IEN - 14092



STAINLESS STEEL FLOATS

● Stainless floats by Chicago Float Works give you a practically permanent installation. Whether for use on original equipment or for replacement, you just put 'em in and forget 'em. You'll get years and years of trouble-free service in high or low temperatures or pressures. All sizes, shapes, spud connections available. No corrosion problem . . . extreme buoyancy — the best in floats to meet every need!

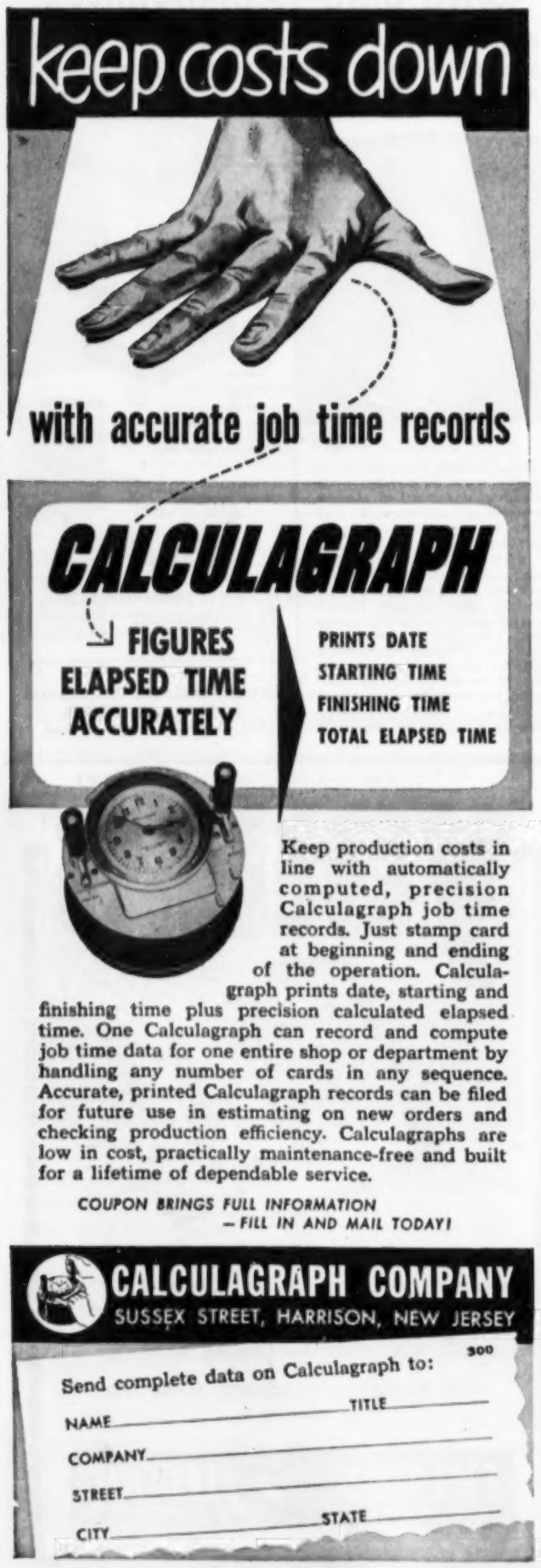
● Standard Diameters 2" to 10" ● All Standard Spud Connections ● Top quality Stainless Steels ● Non-corized weld for superior strength, and corrosion resistance available where required

Send for complete bulletin on styles, sizes, shapes, spud connections and recommendations.

CHICAGO FLOAT WORKS

2326 South Western Avenue • Chicago 8, Illinois

If you write maker identify as IEN - 14093



Keep production costs in line with automatically computed, precision Calculagraph job time records. Just stamp card at beginning and ending of the operation. Calculagraph prints date, starting and finishing time plus precision calculated elapsed time. One Calculagraph can record and compute job time data for one entire shop or department by handling any number of cards in any sequence. Accurate, printed Calculagraph records can be filed for future use in estimating on new orders and checking production efficiency. Calculagraphs are low in cost, practically maintenance-free and built for a lifetime of dependable service.

COUPON BRINGS FULL INFORMATION — FILL IN AND MAIL TODAY!

CALCULAGRAPH COMPANY
SUSSEX STREET, HARRISON, NEW JERSEY

300

Send complete data on Calculagraph to:

NAME _____ TITLE _____

COMPANY _____

STREET _____

CITY _____ STATE _____

If you write maker identify as IEN - 14095

BEARING . . Roller thrust design carries 590,000 lb. load at 100 rpm.

Source: ROLLWAY BEARING CO.
539-43 Seymour St., Syracuse 4, N. Y.

New roller layout

Long slots, set radially to carry five rollers each, are alternated with short radial slots carrying four rollers each in this new design of the company's Type T-59 thrust bearing. The staggered slot arrangement increases the number of rollers available to carry the thrust load as compared to the company's previous design. Capacity has been increased as a result, to 590,000 lb. at 100 rpm. as compared to 542,000 pounds.

The bearing is a flat seat single acting design with two flat plates and the rollers assembled in a bronze retainer. The bore on one of the plates is ground to be a slip fit on the shaft and the outside diameter is machined to provide clearance in the housing so this plate can revolve. The other, stationary plate, is ground on the outside diameter for a slip fit in the housing and its bore is machined to provide clearance around the shaft. Bore diameter is 12 inches. Outside diameter is 24 inches. Height is 4½ inches. The rollers are 1½ inches in diameter. The roller retainer is centrifugally cast to eliminate the possibility of voids or blow holes.

If you write maker identify as IEN - 14096

GALVANIZING . . Repair material restores damage in small metal areas

Source: FARRELLOY COMPANY
1249 N. 26th St., Philadelphia 21, Pa.

$3 per 2 lb. can

Fareo Brand Z is a new combination of powdered zinc and flux to restore galvanized coating and to repair areas of galvanized metal that have been damaged by heat from welding. Application can be made with a torch or a soldering iron depending upon the metal thickness. The finished work will withstand 800 hr. in a 20 per cent salt spray without corroding.

Application can be made on flat, vertical and overhead surfaces. In addition to its use to restore galvanized coatings, it can serve as a base for tin lead solders on metals normally difficult to solder. Packaging is in 2-lb. cans.

If you write maker identify as IEN - 14097

The best label of the month, in the opinion of a group of judges, among all of the labels that go through the production lines of Ever Ready Label Corp., 359 Cortland St., Dept. IEN, Belleville 9, N. J., is now being selected and publicized by the company. You are invited to write for a free Idea Book and Label-Of-The-Month presentation sheet.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14098

How YOU can tie better!

U·S·S GERRARD ROUND STEEL STRAPPING For palletizing, unitizing and carload reinforcement, on odd-shapes, and on cartons, crates and bundles of every size, U·S·S Gerrard Round Strapping is easiest to use because of its flexibility. It may be applied with both hand-operated and semi-automatic machines. And Gerrard Round Strapping costs about 40% less than any other metal reinforcement.

U·S·S GERRARD FLAT STEEL STRAPPING For certain palletizing, unitizing and carload reinforcement applications, some shippers prefer U·S·S Gerrard Flat Strapping. It is available in heavy duty sizes, and the Gerrard tools for stretching and sealing it are among the most modern and efficient now made.

A Gerrard engineer will gladly help you improve efficiency or lower cost of your tying operations, if such be possible. He can advise on the tying method that *best* fits your needs. Write for further information.

A complete packaging service from carload to parcel post.

GERRARD STEEL STRAPPING DIVISION
UNITED STATES STEEL CORPORATION
4701 South Richmond St., Chicago 32, Ill.

USS

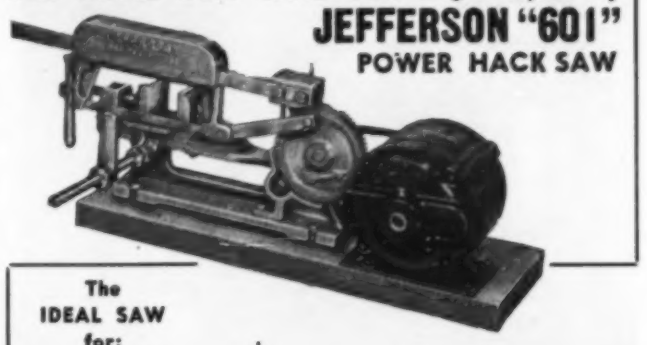
U·S·S GERRARD
Round Steel **STRAPPING** *Flat Steel*

UNITED STATES STEEL

If you write maker identify as IEN - 14099

The Little Saw With The Big Capacity

JEFFERSON "601" POWER HACK SAW



The IDEAL SAW for:

- Machine Shops
- Welding Shops
- Implement Shops
- Garages
- Hobby Shops
- Service Stations
- Blacksmiths
- Plumbers
- Electricians
- Farmers
- Steamfitters
- Maintenance Men

THE LARGE VARIETY OF USES PUTS THIS HANDY SAW IN BIG DEMAND GROUP

This little saw does a truly big job with precision accuracy and dependability. It cuts all metals including steel, brass and aluminum. It will handle up to 3½" x 3½" stock — square, round or pipe. Standard equipment includes a swivel vise which mitres up to 45°, and a sturdy gauge bar for uniform length of cut stock.

...and, IT SELLS FOR ONLY $71.50 including motor, ? ? ?

Write today and let us send you complete information and details.

Sales Service Machine Tool Co. SSMT
PRESS RITE PRESSES • SHAPE RITE SHAPERS • KELLER POWER HACK SAWS

2365 UNIVERSITY AVENUE • ST. PAUL W4, MINNESOTA

If you write maker identify as IEN - 14100

Will You Have Enough GAS This Winter?

PRODUCTION IS ASSURED with VAPOFIER

Many costly plant shutdowns have been avoided by installing Vapofier as a dependable gas supply. Over 100 varied types of industries use it. Produces clean, sootless, odorless gas by vaporizing (not atomizing) fuel oil. Reliable automatic control, constant fuel-air ratio and uniform manifold pressure. Quick change from utility gas without flame interruption, using same piping and burners. 9 sizes with capacities from 70,000 to 4,000,000 B. T. U.'s per hour.

Write for complete details on the advantages of firing with Vapofier

VAPOFIER CORP. • 10326 S. Throop St., Chicago 43, Ill.

If you write maker identify as IEN - 14101

If you write maker identify as IEN - 14102

HARDINGE Air Classifier

The Hardinge Air Classifier operating in conjunction with the Hardinge Mill, is a compact, self-contained unit of unusual efficiency. The material is conveyed without auxiliary apparatus to any convenient location in the building. The Hardinge "Superfine" Classifier (illustrated) can produce 99½% plus passing 325 mesh.

Bulletin 17-B-38

HARDINGE COMPANY, INCORPORATED

YORK, PENNSYLVANIA · 240 Arch St. · Main Office and Works

New York · Toronto · Chicago · Hibbing · Houston · Salt Lake City · San Francisco

If you write maker identify as IEN - 14103

Push-button Muscle

The tough little brute of a work-saver when you've got pipe to thread, cut or ream

RIDGID

"400" Portable POWER DRIVE

On your bench!

Portable Stand

It's light weight!

● The last word in easily portable power to turn your pipe for threading, cutting, reaming with your hand tools—quickly pays back its cost in saved time and work. Capacity ⅛" to 2" but scads of power even for geared tools to 12". RIDGID design 3-jaw chuck, 6 pinions, one always handy. Self-centering workholder in rear. Sealed-in lubrication—no oil to spill. Famous RIDGID "guts" in it—scores of thousands in use. Try it, buy it—at your Supply House.

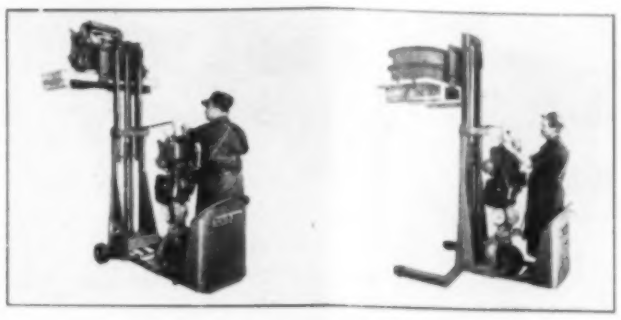
THE RIDGE TOOL COMPANY • ELYRIA, OHIO

RIDGID Work-Saver Pipe Tools

If you write maker identify as IEN - 14105

TRUCK . . Engine driven fork lift, light weight design for loads to 1 ton

Source: TRUCK-MAN DIVISION
591 Liberty St., Jackson, Mich.



Ask for 12 page Truck-Man Catalog

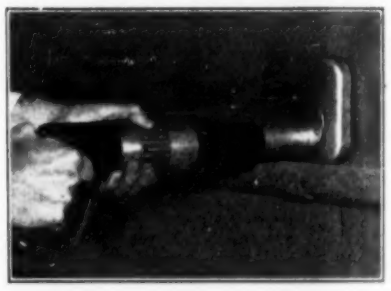
Two designs, one with a counter weight and the other with projecting wheel equipped legs, have been added to the company's line of light weight high lift trucks. They are particularly suited for loads to 1,500 lb. and to 2,000 lb. with truck weights at 1,700 lb. and 1,300 pounds. Both designs can be carried on comparatively light duty elevators. Both employ the company's engine mounted turret type drive. It includes a pump that supplies pressure to the load lift cylinder.

Model D15, to the left, has a mast height of 64 in. and wheel base and turning radius both measure 36 inches. Model DS-20, to the right, has a mast height of 66 in. with wheelbase and turning radius measuring 41 inches. Widths are 35 and 45½ inches. Lift is 84 inches. Load center is 15 inches. The engine is a 6-hp. Wisconsin air cooled unit.

If you write maker identify as IEN - 14106

FASTENING . . Steel anchor stud driven by cartridge in portable tool

Source: POWDER POWER TOOL CORP.
7524-28 S. W. Macadam, Portland 1, Oregon



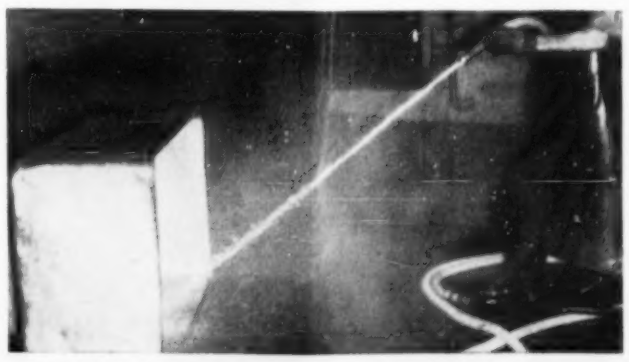
Eight studs per minute

Hardened steel studs, with sharp points at one end and with ¼ or ⅜-in. thread or head diameter at the opposite end, are placed one at a time in this new Model 410 Drive-It tool along with a loaded 0.38-caliber blank cartridge. The tool is positioned against a surface into which the stud is to be driven. The operator presses the tool against the surface and then turns the firing ring to explode the cartridge. The stud is driven into the concrete or into steel or wood to serve as a permanent anchor.

The tool opens at the breach for fast loading and cartridge ejection. It can be taken apart for cleaning by releasing a detent lock. The safety pad at the nose keeps the tool on the work surface and also traps particles dislodged by the stud as it enters the concrete or steel surface at high velocity. Power is controlled by a variable combustion chamber so one strength of cartridge can be employed for any desired penetration of the stud selected.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14107



Metso Detergents for fast cleaning

Metso cuts tightly-held grease and oil films *quickly*. The balanced components in Metso—alkali-soluble silica - - - completely

- saponify fats and oils
- emulsify mineral oils
- keep loosened soil in suspension for free rinsing

Write us for test samples, literature and prices.

Metso® Sodium Metasilicate (Pentahydrate)
Metso Anhydrous Sodium Metasilicate (Anhydrous)
Metso 99® Sodium Sesquisilicate
Metso 200 Sodium Orthosilicate

PHILADELPHIA QUARTZ COMPANY
1131 Public Ledger Bldg., Philadelphia 6, Pa.

Metso® Detergents
PQ® SILICATES OF SODA

If you write maker identify as IEN - 14108

Tests prove

superior corrosion resistance of new G-E WHITE conduit

The new G-E WHITE rigid steel conduit is zinc galvanized by the metallizing process. This process has been used for many years to protect exposed metal surfaces such as ship hulls and water tanks, and now gives this same lasting protection to General Electric conduit.

This new conduit has undergone salt spray, heat, acid, and humidity tests. It has been exposed to the corrosive fumes found in industrial atmospheres. In all of these tests the new G-E WHITE surpassed the requirements of all nationally accepted standards. Contractors say it saves installation time, too, because it bends easier, saws easier, and threads easier than old-style conduit. Wires pull easily too, because of the special antifriction lining.

For more information on the new G-E WHITE conduit, ask your distributor, or write Section C39-1242, Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.

You can put your confidence in—

GENERAL ELECTRIC

If you write maker identify as IEN - 14109

J-M BLAZECRETE cuts refractory maintenance costs . . .

That's why it pays you to use this hydraulic-setting refractory for temperatures to 3000F.

BLAZECRETE* materially reduces labor costs, saves time in building and repairing linings.

For troweling, just mix Blazecrete with water as you'd mix ordinary concrete . . . then slap-trowel it in place. When gunned, it adheres readily with a minimum of rebound loss. Either way, Blazecrete goes on fast, without ramming or tamping. And Blazecrete linings *last.*

Blazecrete comes in three types. All harden on air curing, do not require prefiring. They are furnished as a dry mix—can be stored safely.

3X BLAZECRETE—For temperatures through 3000F. Excellent for forge furnace linings, lime kilns, burner blocks, soaking pits, and industrial boilers.

STANDARD BLAZECRETE—For temperatures through 2400F. Can be used by boiler manufacturers to replace fire clay tile in wall construction.

L. W. BLAZECRETE—For temperatures through 2000F. An insulating refractory . . . light in weight, low in thermal conductivity.

For full details, send for Brochure RC-28A. Write Johns-Manville, Box 60, New York 16, N.Y. In Canada, 199 Bay St., Toronto 1, Ontario.

*Reg. U. S. Pat. Off.

Johns-Manville BLAZECRETE
BUILDS BETTER REFRACTORY LININGS

If you write maker identify as IEN - 14110

The need for Dy-Namically Balancing every rotating part—especially those that spin at high speeds—is being recognized in every phase of industry. Select the "Bear" Machine that fits your budget and your operation from the . . .

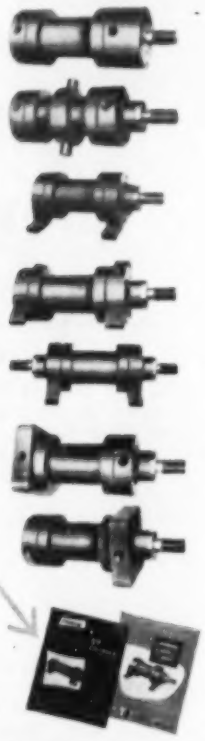
free DY-NAMIC BALANCING MANUAL!

Tells how you can easily, quickly, economically balance rotors, armatures, crankshafts, and any other part that turns, weighing from 4 oz. to 8 tons! See how to reduce wear, eliminate noise and vibration, improve all-around performance of finished product. Your copy sent without cost or obligation. Bear Mfg. Co., Dept. I-5, Rock Island, Ill.

6038

"BEAR"
STATIC AND DY-NAMIC BALANCING MACHINES
balance rotating parts weighing from 4 oz. to 8 tons

If you write maker identify as **IEN - 14111**



CYLINDERS!

CYLINDERS!

CYLINDERS!

Lindberg builds a complete line of standard heavy duty air and hydraulic cylinders..up to 12".

Lindberg also builds super heavy mill type cylinders for extremely tough and heavy jobs.

Ask for bulletin #731 (air)..#701 (hydraulic).

LINDBERG AIR . . HYDRAULIC CYLINDERS

Lindberg Air and Hydraulic Division

Lindberg Engineering Co. • 225 North Laflin Street • Chicago 7, Illinois

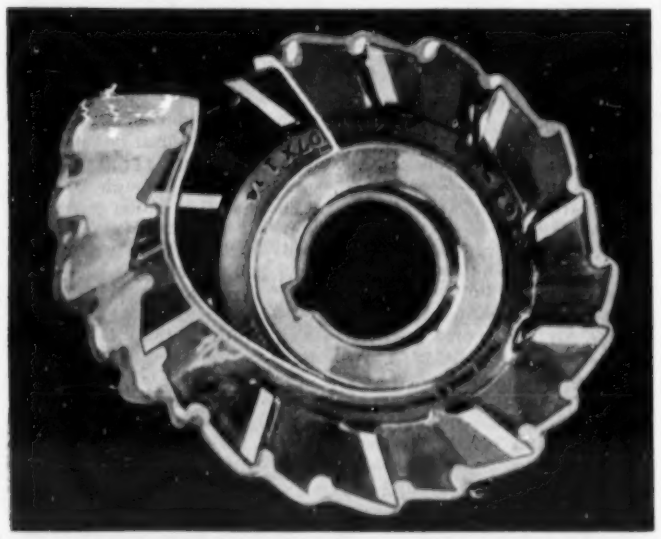
If you write maker identify as **IEN - 14112**

POSITIVE PROTECTION

and ready to go places with

WESTCOAT TRANSPARENT

HOT-DIP COATING



Far exceeds requirements of military specification JAN-C-149, Type II and AN-C-117b, Type II. Method 1b packaging.

Here's a partial check list of how WESTCOAT-CLEAR No. 202 saves you money, time and work!

- Quick-dip, fast-set coating—replaces old packaging methods.
- Strips easily—like peeling a banana for quick depreservation.
- Withstands 1000 hrs. of 100% relative humidity at 100° F. without rusting.
- Save money—reusable. Simply strip off, remelt and reuse.
- Transparent—instant product identification.
- Cushions shock and rough handling—protects cutting tools, delicate instruments.
- A *must* for world-wide shipping—saves weight, space and protects against rust, abrasion.
- Unaffected by temperature changes—minus 40° to 160° F.

Learn how WESTCOAT-CLEAR can end your packaging worries. Spend pennies and save dollars. Investigate Method 1b packaging now!

WESTERN COATING COMPANY

Eastern Plant—P. O. Box 227, Elyria, Ohio
Western Plant—85 West Union Street, Pasadena 1, California
Representatives in principal cities

PROTECT WITH **WESTCOAT**

SEND IN COUPON TODAY

SEND ME DESCRIPTIVE LITERATURE ON WESTERN COATING PRODUCTS.

NAME & COMPANY _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

If you write maker identify as **IEN - 14114**

SWITCH . . Miniature snap acting for application subject to vibration

Source: ELECTRO-SNAP SWITCH & MFG. CO.
4220 W. Lake St., Chicago 24, Ill.

Hammer-Blow design

Type S Series 200 is a new snap acting switch in which the contacts maintain 45-gm. pressure until the instant they snap over. When they do move they act with an impact force of 150 to 200 grams. Construction and operation are suited particularly for applications involving vibration and for accurate control with slow moving cams and pressure operated devices.

The contacts rate 15 amp. on 110/220-volt ac. Contact arrangement is single-pole double-throw two-circuit. Operating force is 20 oz. with release force minimum at 8 ounces. Overall dimensions are 1½ by ½ by ½ inch.

A reset model is available also. It holds the contacts in one position until a second button is pressed. This unit is designed for over pressure and other over limit safety uses and for reversing control. A range of actuators including lever, leaf, push button and toggle types are available.

If you write maker identify as **IEN - 14115**

HANDLING . . Steel tote box stacks when filled, nests in storage

Source: CHARLES WILLIAM DOEPKE MFG. CO.
Emerald & Blue Ash Sts., Dept. IEN, Rossmoyne, Ohio

Reach in either side

New size has been added to the twin hopper Nestier tote box, previously described IEN-11380-51. The new unit is made of 20 gage steel. It measures 12 by 7¼ by 4¾ inches. It weighs 3 lb. and is finished in green baked enamel.

Filled units can be stacked upon one another to serve as bins from which the contents can be drawn from either side. Empty boxes nest within each other. Tiers can be built up to about 6 ft. in height without danger of buckling, depending upon the weight of the parts. The box will handle 200 lb. with a standard hinged handle. This can be increased to 400 lb. when the heavy handle is employed.

If you write maker identify as **IEN - 14116**

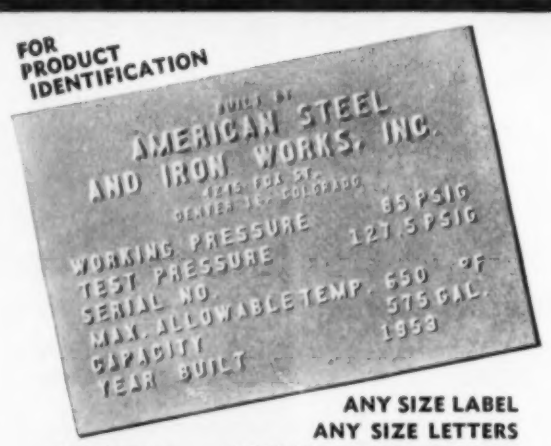
Cerroseal-35 is an alloy of indium and tin that softens at about 240 deg. F. and is liquid above 260 deg. F. It is featured by low vapor pressure and so is suited for use as a seal between glass and glass or glass and metal in high vacuum apparatus. The alloy also will adhere to mica, quartz, thermosetting plastics and some glazed ceramics. Technical information concerning it is available in Data Sheet E-14 on request to Cerro de Pasco Corp., 40 Wall St., Dept. IEN, New York 5, N. Y.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 14117**

EMBOSSED LABELS

FOR PRODUCT IDENTIFICATION



ANY SIZE LABEL
ANY SIZE LETTERS
ANY METAL — FERROUS OR NON-FERROUS

NO DIE CHARGE

Raised-letter nameplates to your specifications. Less expensive than comparable etched labels.

You can tack-weld, rivet or screw them to your product. You can paint or galvanize over them. All wording will remain sharp and clear. We also manufacture etched and lithographed labels.

Write for Literature and Price Quotation

DEPT. A

TECH PRODUCTS, INC.
442 Mosel Avenue Staten Island 4, N. Y.

If you write maker identify as **IEN - 14118**

Get the most "coverage" for your money

GOLD SEAL PLASTIC Electrical Tape

Now . . . Gold Seal time-proved quality in *Plastic* Tape. Neat, thin wrapping gives all needed insulation on most jobs. Sticks fast—gives lasting protection—resists sunlight, water, oil solvents. Try it. Free sample on request. Jenkins Bros., Rubber Div., 100 Park Ave., New York 17.

JENKINS

Gold Seal Tape

FRICTION • RUBBER • PLASTIC

Single rolls, cellophane protected, and 10-roll Handy Pack cartons. Also Diamond Seal Friction and Rubber Tapes made to ASTM Specifications.

If you write maker identify as **IEN - 14119**

NEW!

Atlas CLAUSING PRECISION MACHINE TOOLS — DIVISION ATLAS PRESS COMPANY KALAMAZOO, MICHIGAN U. S. A.

18" HEAVY DUTY POWER FEED DRILL PRESS

★ Drills 1" cast iron, ¾" steel
★ No. 3 Morse Taper, 6½" spindle travel
★ HEAVY-DUTY GEAR-DRIVEN POWER FEED TO TAKE FULL ADVANTAGE OF THIS BIG TOOL AND JOB CAPACITY

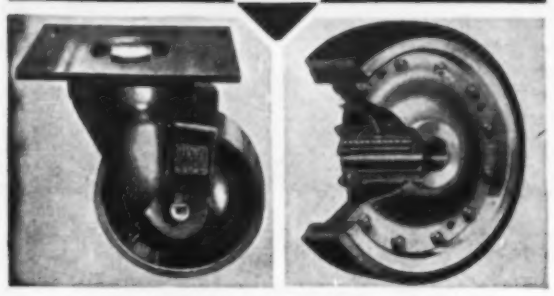
An 18" *heavy-duty* drill press, with larger tool and job capacity, PLUS a *heavy-duty* GEAR-DRIVEN power feed to make effective use of its capacity—those are the brief facts about this fine new Clausing development.

The power feed, with its large heavy-duty gears, is positive and sure—NO belt slippage to reduce power. Feed selection is instant—BY DIAL—no belts to change. Add the Clausing features of new spindle bearing engineering, vernier depth stop, and exclusive head and table positioning mechanism—and you know this is a tool that can save you plenty on both set-up and operating time. Get all the facts—send for new literature today.

CLAUSING DIVISION
ATLAS PRESS COMPANY
12105 N. PITCHER STREET, KALAMAZOO, MICHIGAN

If you write maker identify as IEN - 14122

Always SWIVEL and ROLL



Darnell Casters and Wheels start cutting costs from the very first day of installation. Easy rolling and swivelling increase employee efficiency, save floors and help add to production.

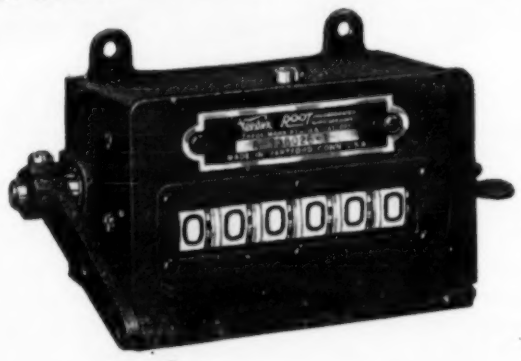
Write for Free Darnell Manual

DARNELL CORPORATION, LTD.
DOWNEY (LOS ANGELES COUNTY) CALIFORNIA
60 WALKER STREET, NEW YORK 13, NEW YORK
36 NORTH CLINTON STREET, CHICAGO 6, ILLINOIS

If you write maker identify as IEN - 14123

BIG SCOREBOARD

for Scores of Manufacturing Processes



Added Evidence that —

Everyone Can Count on VEEDER ROOT

This husky long-lived Box-type Counter is available with 6 figures, in either the ratchet model, or in the new *geared* model with bearing inserts. This new gearing permits speeds of 1,000 counts per minute, which makes the counter adaptable to practically any manufacturing process where large figures are wanted for easy reading at a distance. Figure out how this counter can be *built into* your product as a new sales advantage over competition. Write:

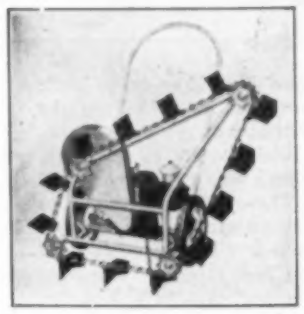
VEEDER-ROOT INCORPORATED
HARTFORD 2, CONNECTICUT
Chicago 6, Ill. • New York 19, N. Y. • Greenville, S. C.
Montreal 2, Canada • Dundee, Scotland
Offices and Agents in Principal Cities

"The Name that Counts"

If you write maker identify as IEN - 14125

SNOW PLOW . . Engine driven, cuts into and throws snow to one side

Source: RAILCENS COMPANY
118-22 N. Wisner, Jackson, Mich.



$145

Steel blades, measuring 5 in. in width by 3 in. in height, are mounted on a chain at the front of this new plow. The chain is driven by a gasoline engine at the rear of the assembly on a tubular steel frame mounted on two wheels. The operator moves the machine forward, with the engine operating, to cut a path about 30 in. in width, throwing the snow to the left hand side.

The machine will cut into frozen snow to about 36 in. in depth. It can be employed against drifts, hard snow that has been piled in a driveway by street cleaners. The engine rates 1 hp. Weight of the assembly is 90 pounds.

If you write maker identify as IEN - 14126

TUBE . . Flexible plastic, translucent, for chemicals, solvents

Source: COUSE & BOLTEN
41 Lafayette St., Newark 2, N. J.

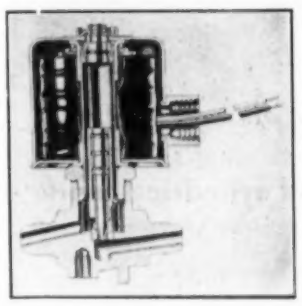
Please note our error

We should have stated, in IEN-12597-53, that the company's plastic tube Cobon, not Cobonol, can be steam sterilized at 20-lb. pressure for 15 minutes or less. The Cobonol, as we did describe it, is suited for service in temperature not higher than 190 deg. F. It has been added to the Cobon line to handle ketones, esters, hydrocarbons.

If you write maker identify as IEN - 14127

VALVE . . Solenoid operated for non-corrosive fluids, refrigerants

Source: A-P CONTROLS CORP.
2448-52 N. 32nd St., Milwaukee 10, Wis.



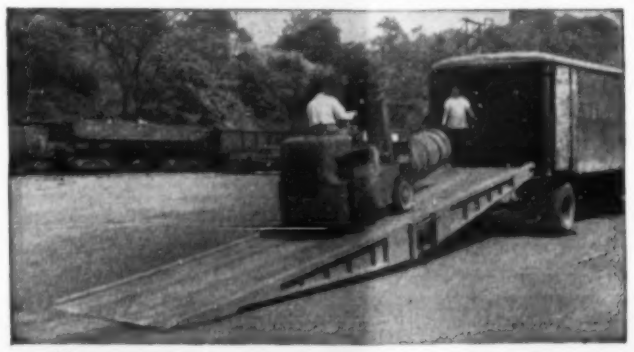
Model 73

Interchangeable operating coils for specified voltages are secured at the top of this new valve by a nut. Each coil is supplied with its own specification plate to position also under the nut. When the coil is in place, it can be rotated through 360 deg. to position it correctly in line with the electrical connections.

The valve is needle design and includes a non-corrosive screen for protection against dirt in the flow passage. It will handle any non-corrosive liquid and is suited also for refrigerants or air. Three orifice sizes are 5/32, 3/16 and 7/32 inch. The valve connections are 3/8-in. pipe thread, 3/8-in. flare and either 3/8 or 1/2-in. solder joint.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14128



"Trailer-Loading Time Cut in Half . . . WITH OUR MAGCOA PORTABLE YARD RAMP"

—Reports Frank Gray, Traffic Manager, Universal-Cyclops Steel Corp., Bridgeville, Pa.

"We now load 400,000 lbs. of steel products in an 8-hour shift; have released two men for other duties—direct benefits of our MAGCOA Yard Ramp," says Mr. Gray.

Here's what you'll find when you look into the revolutionary new MAGCOA Portable Magnesium Yard Ramp that permits truck-loading and car-loading from ground level—

- One man moves it. Hydraulic lift helps position it.
- You get fuller use of present facilities, lift trucks and operators.
- Exclusive MAGCOA quarter-round safety curbs and rounded end-castings protect workers, lift trucks and loads.
- Capacities to 16,000 lbs. in five standard sizes.
- Bridge-type construction of rugged magnesium—by magnesium fabricating specialists.
- Low cost—less than conventional stationary docks in most of U. S.
- Prompt delivery from mass-production factory.
- Enthusiastic users from Coast to Coast.

Look into all the facts! Send for MAGCOA Yard Ramp literature. At the same time, look into how MAGCOA lightweight, heavy-duty Magnesium Dockboards can speed your dock-level loading. *Write today.*

MAGNESIUM COMPANY OF AMERICA
MATERIALS HANDLING DIV. • EAST CHICAGO 14, IND.

If you write maker identify as IEN - 14129

HEAVY DUTY MILL TYPE CYLINDERS

For rough and tough jobs . . . Air and Hydraulic

Lindberg Mill Type Cylinders are heavy, tough cylinders . . with plenty of guts built in. They'll handle the meanest and most demanding job you can think of, and they'll perform dependably under the most adverse operating conditions.

Lindberg also builds a standard catalog line of heavy duty air and hydraulic cylinders . . up to 12". Hydraulic Cylinders available in 1500 and 3000 PSI. Ask for bulletin #731 (air) . . #701 (hydraulic).

LINDBERG AIR . . HYDRAULIC CYLINDERS
Lindberg Engineering Company, 225 No. Laflin St., Chicago 7, Ill.

If you write maker identify as IEN - 14130

If you write maker identify as IEN - 14131

ELASTIC STOP NUT CORPORATION OF AMERICA
Dept. R17-1253, 2330 Vauxhall Road, Union, N. J.

Please send me free design information on

ROLLPIN TRADE MARK

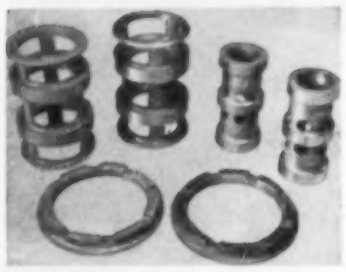
. . . the slotted tubular steel pin with chamfered ends used for production economies in replacing

- ☐ a rivet
- ☐ a set screw
- ☐ a hinge pin
- ☐ a bolt and nut
- ☐ a stop pin
- ☐ a cotter pin
- ☐ a taper pin
- ☐ a dowel

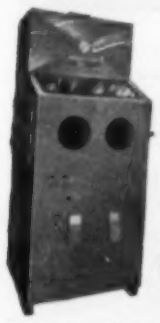
NAME _____ TITLE _____
FIRM _____
STREET _____
CITY _____ ZONE _____ STATE _____

If you write maker identify as **IEN - 14132**

Pressure Blast Application #601



Pressure Blasting has eliminated over-staffed "hand burring benches" in thousands of plants. Costly and slow hand burring methods were forcing costs up on this typical group of parts until Pressure Blasting was introduced. Burring time on the two components to the left was reduced from 9 minutes to 25 seconds . . . on the pair to the right from 6½ minutes to 20 seconds . . . on the pair in the foreground from 7 minutes to 20 seconds. No stock removal . . . no etching!



MODEL A . . . ONE OF 4 STANDARD UNITS. CUSTOM MACHINES DESIGNED TO FIT SPECIAL REQUIREMENTS.

ONLY PRESSURE BLAST GIVES YOU 2-SPEED WET-BLASTING

FREE . . . Learn what PRESSURE BLAST can do for you! Die and Mold Polishing, Blending Grind Lines, Deburring, Heat Treat Scale Removal, Honing of Cutting Tools, Pre-plating Cleaning . . . Hundreds of proven, money-saving applications!

Write for our new 8 page fully illustrated Booklet . . . or send samples of work you want tested to:

The CRO-PLATE Company, Incorporated
747-3 Windsor Street
Hartford 5, Conn.

If you write maker identify as **IEN - 14133**

Widest power range of any powder-actuated fastening tool

MODEL 450 REMINGTON STUD DRIVER

Six different 32 caliber charges meet every fastening requirement

Each of the six power loads for the Remington Stud Driver is designed to give the right power for the job — whether it's driving the stud into concrete or steel.

New, longer heel caps on all six cartridges mean a perfect gas seal . . . assure arrow-straight driving. Bright colors indicate the right load instantly, no chance for error. You can select the *right* cartridge for each job . . . quickly and easily.

But exceptional power range is just one of the Remington Stud Driver's many advantages. This self-powered tool sets up to 5 fastening studs per minute . . . speeds construction jobs and cuts costs. Its light weight—only 5½ pounds—makes handling easy, even in confined places.

Test-proved to be the world's finest and speediest fastening system, the Model 450 Remington Stud Driver is made by the Remington Arms Company, Inc., *America's oldest sporting arms manufacturer*. Send in the coupon below for your free booklet describing the Stud Driver and its many uses.

"If It's Remington—It's Right!"

Remington DU PONT

MAIL THIS COUPON TODAY

Industrial Sales Division, Dept. IEN-12
Remington Arms Company, Inc.
939 Barnum Ave., Bridgeport 2, Connecticut

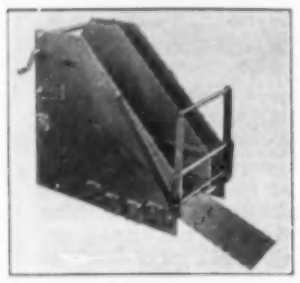
Please send me my *free* copy of the new booklet showing how I can cut my fastening costs.

Name . . . . . .
Position . . . . . .
Firm . . . . . .
Address . . . . . .
City . . . . . *State* . . . . . .

If you write maker identify as **IEN - 14135**

FEEDING . . Motor driven cradle maintains slack loop of strip stock

Source: BENCHMASTER MFG. CO.
1833-37 W. Rosecrans Ave., Gardena, Calif.



Needs no attention

A coil of strip stock, to 36 in. in diameter, is rolled up the ramp that forms a part of this new Koil-Kradle. It rolls into place on a set of needle bearing rolls. These rolls are connected by chain and sprocket to a reversible driving motor. The end of the coil stock is threaded over a trip bar that actuates the motor control.

The bar remains in "up" position to hold the motor circuit open as long as there is a slack loop between the feeder and the machine it is serving. When some of the strip stock is used up and the loop begins to straighten out, the trip bar is pulled forward by the tightening action and the motor circuit is closed. The motor then drives the coil at 90 fpm. until the loop is again formed. It stops at this point and the coil remains stationary until material is again taken from the loop.

Three sizes take coil widths to 10, 13 and 15 inches. Each is fitted with a partition plate mounted on three chain connected crank operated lead screws so the plate can be moved over to keep a narrow coil in line.

If you write maker identify as **IEN - 14136**

CONSTRUCTION . . Rotary shovel applies in portable tool to dig holes

Source: MULTI-MATIC CORPORATION
14741 Bessemer St., Dept. IEN, Van Nuys, Calif.

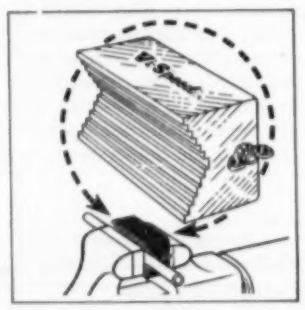
The Hole-A-Matic

New assembly of portable electric tool and rotary shovel digs holes at required angles, to 6 ft. in depth with an extension shank. It can be applied for pipe installations to tunnel to 12 ft. in depth. Operation for the ball bearing grease lubricated sealed tool is on 110-volt ac. or dc. List price is $149.50. A carrying case adds $19.50.

If you write maker identify as **IEN - 14137**

VISE . . Clamp-on jaw to hold pipe and cylindrical work

Source: VAN PRODUCTS CO.
3783 W. 12th St., Erie, Pa.



Folder PS-53

New jaw is recessed to fit on a standard vise jaw face and is equipped with a wing head set screw to hold it in place. The jaw is toothed on a shallow vee to take pipe or tube from ⅛ to 2½ inches. The pipe cannot slip, turn or loosen. The jaw can be removed to employ the vise for other purposes. It is made of hardened steel and is supplied in three sizes to fit 4, 4½ and 6-in. jaws.

If you write maker identify as **IEN - 14138**

TESTING . . Electronic tube checker with sockets for conventional bases

Source: WESTON ELECTRICAL INSTRUMENT CORP.
641 Frelinghuysen Ave., Newark 5, N. J.

Includes data chart

Model 981 Type 2 is a new instrument for measurement of proportional mutual conductances, emission characteristics of rectifiers and diodes and the firing potential limits of voltage regulators and low power thyratrons. Provision is made for accurate meter measurement of leakage resistance, to a maximum of five megohms between the tube elements. The instrument also measures transconductance to 24,000 micromhos.

Multiple switching permits making combinations of tube connections. Three toggle switches provide for checking and comparing the respective sections of twin section tubes with one setting of the selector switch. Sockets are provided for conventional type tube bases including acorn and 7 and 8 pin subminiature tubes. A roll chart presents tube test data. Overall dimensions are about 18 by 13 by 6 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 14139**

THREE "CHEATS" IN THE WIND

Don't let Dirt, Dust and grit rob your machinery of its efficiency — *cheat* you out of profitable operation. Blast 'em out of every crack and crevice with a powerful CLEMENTS - CADILLAC blower-suction cleaning tool. Cleans all types of equipment . . . quickly, thoroughly, economically.

SAVE TIME + MONEY PREVENT DAMAGE TO MACHINERY WITH THE . . .

CLEMENTS CADILLAC

Made in 5 models with attachments for every cleaning job.

PORTABLE COMBINATION BLOWER-SUCTION CLEANER

CLEMENTS MFG. CO.
6620 S. NARRAGANSETT AVE. CHICAGO 38, ILL.

ASK YOUR MILL SUPPLY DEALER OR WRITE US FOR DATA

If you write maker identify as **IEN - 14140**

STEEL BUILDINGS

Standard design — insulated

Clear Spans 40, 48, 60 & 80 feet
Length in multiples of 16 feet

Standardized trusses, columns, roof, side walls, insulation, windows, doors, accessory members are assembled to meet your requirements for a factory building, machine shop, warehouse, utility building. Single spans of 40, 48, 60 and 80 feet can be assembled in multiple. Standard sides are 12, 16 and 20 feet in height. Standard length is in any multiple of 16 feet. Windows are furnished in any 8-foot section. Hinged single doors are standard in an 8-foot section. Double hinged or overhead doors are supplied in any 16-foot section. Crane runways are available in 5, 7½ and 10 ton capacities.

Folder I — 8 pages of detail drawings, specifications, and an inquiry form to request quotation.

Brookville Manufacturing Co.
P. O. Box 67 Brookville, Pa.

If you write maker identify as **IEN - 14141**

IT TAKES TWO TO MAKE A BARGAIN

But Only ONE MACHINE To Make Two Bends

Now you can make two bends at the same time in a piece already bent on different planes. The dies are adjustable to any centers within the height of the central die spindle. This feature also insures that both the top and bottom bends will be identical. The PEDRICK Benders are equipped with automatic relay controls for automatic duplicate production bending. Ideal for chair frames, cart handles, and a myriad of other applications.

Write for descriptive folder.
Prices as low as $1575.00

PEDRICK TOOL & MACHINE CO.
3640 North Lawrence St., Dept. 7, Phila. 40, Pa.

If you write maker identify as IEN - 14142

hand stoning with

HARD ARKANSAS* FILE boosts tool life, jumps output 318%

● One tool room manager reports that by stoning a milling cutter after regular grinding he not only increased the life of the tool but was able to jump output on a magnesium casting from 67 to 280 parts. Master machinists and tool makers know that properly sharpened tools cut faster, longer, and more economically. They also know that there is no better way to sharpen a tool than final hand stoning with an INDIA® Oilsione or HARD ARKANSAS File. There's a size and shape for any job. Just ask your distributor for them.

GET THIS HELPFUL BOOK *on the advantages of hand-stoning cutting tools. Address Behr-Manning Corp., Troy, N. Y., Dept. IEN-12.*

*Trade-marks

BEHR-MANNING division of NORTON Company ▲ COATED ABRASIVES ▲ SHARPENING STONES ▲ PRESSURE-SENSITIVE TAPES

If you write maker identify as IEN - 14143

PROVED IN OVER 1700 INSTALLATIONS!

Production soars with "JET" handling of condensate with a

cochrane C-B CONDENSATE DRAINAGE SYSTEM

Over 1700 installations in every kind of steam process work, prove that the Cochrane "JET" principle of condensate drainage steps up production, cuts fuel costs and improves quality.

Up to 35% increase in production has been achieved. The Cochrane "JET" unit removes "insulating" layers of condensate from all types of steam processing equipment continuously and effectively. It produces faster, more efficient heat transfer; eliminates cold starts; speeds cooking, drying and curing cycles.

Improved product quality. The Cochrane "JET" unit levels out heat fluctuations—maintains uniform intense heat transfer, producing better quality product in less time.

Lower fuel and maintenance costs. The Cochrane C-B system chops fuel costs by 10% or more returning condensate to the boiler or "make-up" system without appreciable pressure or temperature drop—cuts make-up water requirements—eliminates flashing—reduces boiler room maintenance, automatically separates entrained air and corrosive gasses from returned condensate.

Write today for full information on how a Cochrane C-B High Pressure Condensate Drainage Control System can help you when used with . . .

Platen Presses	Vulcanizers	Tumblers
Jacketed Kettles	Tube Dryers	Coil Cookers
Dry Cans	Ironers	Drum Dryers
Expellers	Dry Plates	Spray Dryers
Drying Rolls	Unit Heaters	Presses
Coil Dryers	Jacketed Mixers	Digesters
Stills	Paper Machines	Heating Systems

cochrane corporation

3152 N. 17th Street, Philadelphia 32, Pa.

If you write maker identify as IEN - 14145

PRESS . . Solenoid operated for light punching, marking, cutting

Source: BLACK & WEBSTER INC.
443-45 Watertown St., Dept. N-8, Newton 58, Mass.

125 blows per minute

Series 4 designates new design of the Electropunch, previously described IEN-13263-52. The new machine is essentially an electro magnetic impact hammer consisting of a solenoid and spindle mounted in an adjustable bracket. The solenoid is energized, when a circuit switch is closed, to drive the plunger downward for an impact blow ranging to 3,500 pounds. A spring returns the plunger, ready for the next operation, when the circuit is opened.

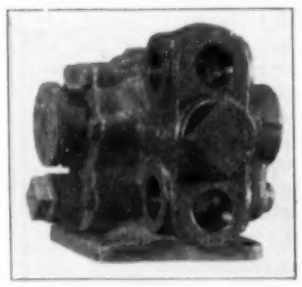
Base dimensions are 9 by 6½ inches. Column height is 12 inches. Operation, in standard design, is on 110-volt 60-cycle single-phase ac. Accessories include a safety switch, foot switch, height adjustment, single stroke control and repeat control.

Design changes have been made in the base to increase the working surface and a skirt has been added to protect the recessed hand switch from breakage or accidental operation. The column bracket has been redesigned and strengthened for rigid solenoid support and alignment. This bracket also encloses the plunger and return spring. The solenoid assembly is enclosed in a perforated steel housing in removable design. An adjustable cushioned return stop has been added on top of the solenoid to limit the return stroke and to minimize noise and wear.

If you write maker identify as IEN - 14146

VALVE . . Four way hydraulic to 400 gpm. and 1,500 lb. per sq. in.

Source: A. W. CASH COMPANY
Box 551, Dept. IEN, Decatur, Ill.



One to three cylinders

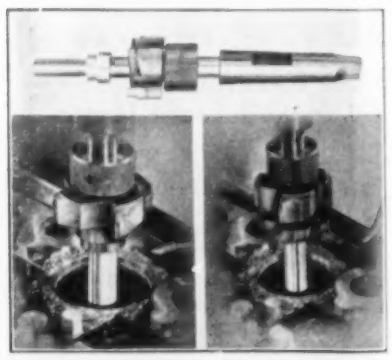
Operating lever connects to the shaft mounted plate shown to the left in this new design of the company's Type 555-RO operating valve. The shaft rotates in the valve body on ball bearings in connection with a spring backed detent that keeps it normally in a main power position. It is moved to one extreme, in a 90-deg. arc, to apply pressure on one side of one to three hydraulic cylinders and to relieve pressure back to the pump on the opposite side. Conditions are reversed when the lever is moved to the opposite extreme. There is an intermediate position that releases all pressure for floating action in the cylinders.

The valve carries three outlet and return ports on each of its two sides. These ports can be used selectively and the unused ones plugged or all three, on each side, can be connected to three power cylinders. A relief port can be set for 100 lb. in excess of normal operating pressure to a maximum of 1,500 pounds. Recommended fluid is No. 10 SAE motor oil or hydraulic oil of similar viscosity. Overall dimensions are about 8 by 7¼ by 9½ inches.

If you write maker identify as IEN - 14147

BORING . . Bars and cutters for application in a drilling machine

Source: BELOCK INSTRUMENT CORP.
111-03 14th Ave., College Point 56, N. Y.



Patent applied for

Holes can be through bored and precision counterbored on an upright or a radial drilling machine with the company's new combination of piloted boring bar and carbide tipped cutters. Type BT-100, for through bores, and Type BT-200, for a combination of bore and counterbore, are available in a range of cutter sizes from 1.250 to 3.000 inches. Also available is a Type BT-300 combination bore and counterbore for a through bore range between 2.000 and 5.625 in. and a Type BT-400 for counterbore finishing. Its range is between 1.250 and 5.812 in. in several sizes.

Each bar carries a No. 4 Morse taper drive and has a pilot and adjustable stop collar. The pilot is designed to ride in a bushing mounted in a pilot plate supplied by the user, or by the company to specification. Intended use for the bar is to complete boring operations, immediately following drilling, without having to take the work to a special boring machine.

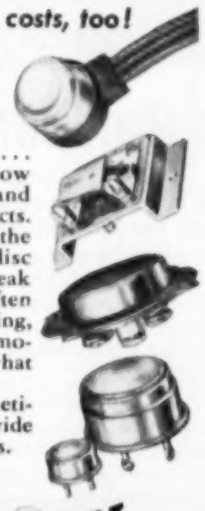
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14148

Have you a temperature control problem from -20°F to 550°F?

KLIXON *Thermo-Snap* CONTROLS

can meet your requirements . . . often reduce costs, too!



What's your temperature control problem . . . high or low limit, fan control, temperature control . . . on boilers, clothes dryers, unit and space heaters, refrigeration and electronic equipment . . . Klixon Thermo-Snap Controls are now meeting the requirements for these and other uses in military and civilian products.

The advantage of Klixon Controls is the Spencer snap-acting thermostatic disc which always makes a quick, clean break or a sure, solid make no matter how often it operates. The Spencer disc is snap-acting, it is not affected by shock, vibration, motion or high altitude no matter in what position it is mounted.

Klixon Thermo-Snap Controls, hermetically sealed and open are available in a wide variety of operating temperature ranges.

Write for further information.

SPENCER THERMOSTAT
Division of Metals & Controls Corp.
212 FOREST ST., ATTLEBORO, MASS.

KLIXON

If you write maker identify as IEN - 14149

Everyone knows this is a fine brand of paper

This camera helps make it so

Sometimes problems involving fast-moving mechanical action or fluid flow are more quickly solved by taking the "long look" that high speed movies give you.

Champion Paper and Fibre Company engineers do this with a Kodak High Speed Camera. By filming a troublesome operation or process at 3200 pictures a second and then projecting the films at normal speed on a standard projector, action appears to slow down as much as 200 times. This often makes it possible to see exactly where the root of the trouble lies, and the films can be shown over and over again, stopped at critical points for detailed study and analysis.

With its Kodak High Speed Camera, Champion has studied the factors involved in the formation of a sheet of paper from a pulp suspension, investigated tests used to evaluate paper, studied mechanical problems connected with mill machinery.

Perhaps you have a high speed problem that has to be seen to be solved. Perhaps you find that "cut-and-try" experimentation is too time-consuming and costly. A Kodak High Speed Camera may well be your answer. It has the right speed range for most industrial applications, is not too difficult to operate, uses regular 16mm movie film. To see how others have used it, send for our new booklet, "High Speed Motion Picture Making in Industry." Or write for details on a sound movie, "Magnifying Time."

Industrial Photographic Division
EASTMAN KODAK COMPANY
Rochester 4, N. Y.

the Kodak *HIGH SPEED* Camera

Kodak

If you write maker identify as IEN - 14151

No Shut-Down For Filter Cleaning!

Cuno's exclusive "comb-clean" action provides complete cleaning of the strainer element on the job—*without stopping fluid flow.*

Just an occasional rotation of the handle does the cleaning. The strainer element turns through the cleaner blades, combing all dirt from the strainer surfaces. Dirt particles fall to bottom of housing, where they can be drained off periodically.

As for application, remember, if you can pump it, Cuno can filter it. Write for more facts about the modern AUTO-KLEAN strainer. Cuno Engineering Corp., Dept. 6917A, Meriden, Connecticut. A.3.17

If you write maker identify as IEN - 14152

...free your draftsmen from tedious lettering jobs...

YOUR OFFICE TYPIST CAN DO EXPERT LETTERING

4 times FASTER!

BILLS OF MATERIAL, SPECIFICATIONS, SCHEMATICS, NOTES....ALL EXPERTLY LETTERED BY YOUR OWN OFFICE TYPIST!

THE TYPE FACES ARE INSTANTLY CHANGEABLE OFFERING A WIDE VARIETY TO MEET ALL THE REQUIREMENTS OF ALMOST ANY TRACING.....

THE STANDARD TYPEWRITER KEYBOARD PERMITS YOUR TYPIST TO TAKE OVER THE LETTERING JOB NOW A BOTTLENECK IN YOUR DRAFTING ROOM OPERATIONS. THE VARI-TYPER LETTERING MACHINE WILL GIVE YOU CLEANER, SHARPER, MORE LEGIBLE LETTERING 4 TO 5 TIMES FASTER, WITH TREMENDOUS SAVINGS.

THE COUPON BELOW WILL BRING FULL DETAILS AT ONCE.

VARI-TYPER LETTERING MACHINE TAKES TRACINGS 6 FEET OR MORE IN WIDTH.

A wide selection of mathematical types and symbols for dimensioning, legends, and notes.

Vari-Typer Lettering Machine

RALPH C. COXHEAD CORPORATION
720 Frelinghuysen Avenue, Newark 5, N.J.
Please send me Vari-Typer Booklet 320
NAME.....
COMPANY.....
ADDRESS.....
CITY.....ZONE....STATE.....

If you write maker identify as IEN - 14154

WRENCH . . Electric impact tool for threaded fastenings to 1/4 inch

Source: INGERSOLL-RAND COMPANY
746 Morris Ave., Phillipsburg, N. J.

Small, fast, sturdy

Impactool 2U is a new size in the company's line of power wrenches. It weighs 5 lb., measures about 9½ in. in length. Operation is on 110-volt ac. or dc. The motor cannot be burned out by overloading.

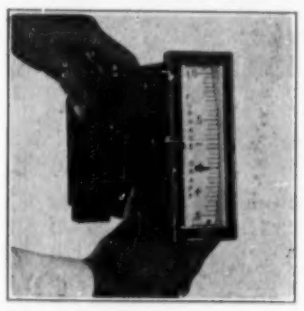
Drive is by an essentially friction free ball-and-cam impact mechanism. Separate sealed grease lubricated ball bearings maintain alignment and require no attention. The tool is balanced and is finished in polished aluminum with a maroon colored reversing control cap at the rear.

Also available is a new angle head attachment designed for use on Impactools with ½ in. and ⅝-in. square drivers. The attachment snaps in place on the tool nose and can be rotated through a complete circle in relation to the tool handle. Height to the shoulder of the square driver, which lies at 90 deg. with the tool axis, measures 3 inches. Overall length is 6¼ inches. The spindles ride on ball and needle bearings.

If you write maker identify as IEN - 14155

GAGE . . Panel instrument reads vacuum, pressure or differential

Source: REPUBLIC FLOW METERS CO.
2244 Diversey Parkway, Chicago 47, Ill.



Specification 805

New gage employs a diaphragm and pointer that moves over a scale, 5 in. in length, for installation in a panel. Operation is by a diaphragm for a pressure range from 0.6 to 40 in. of water or by a bellows element for a range between 5 and 30 lb. per square inch. The gage also is available with two bellows and two pointers to read flow of steam and air or fuel and air. As many as eight of the single gages can be mounted in a single housing.

If you write maker identify as IEN - 14156

HANDLING . . Feeder rack holds parts boxes for assembly work

Source: STERLING FACTORY EQUIPMENT CO.
189 Charles St., Dept. IEN, Providence 4, R. I.

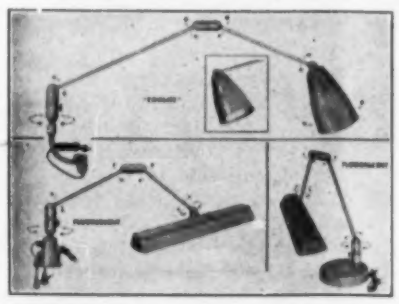
Built to order

Parts boxes ride angle rails from the rear to the front of this new rack. At the front they can be brought out beyond the limits of the rack on movable brackets that apply in slots in the rack uprights. A standard rack will accommodate two boxes in depth. In regular application, the boxes are fed in from the rear and brought out at the front for removal as they are emptied. The rack can be specified for given box sizes. Boxes can be supplied also.

If you write maker identify as IEN - 14157

LIGHTING . . Adjustable fixtures for fluorescent and incandescent lamps

Source: SWIVELIER COMPANY
41-45 34th St., Dept. DLP, Brooklyn 32, N. Y.



Data and prices in Bulletin 134

Dextra-Lites trade names a new line of incandescent Coolite fixtures and fluorescent units. The line includes clamp-on and weighted bases with flexible arms to the lamp hoods. The incandescent units carry metal hoods designed to operate without overheating. The fixture can be adjusted to a desired position and then locked at the base fitting. Finishes are in bronze or gray baked enamel. Green can be specified. The fluorescent units take two lamps, each rating 15 watts. The Coolites take incandescent lamps to 100 watts.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14158

STRAIGHTEN COIL STOCK FOR PRESSES, SHEARS OR SLITTERS

WITH

LITTELL Variable Speed STRAIGHTENING MACHINES

Output rises, costs drop when coil stock is fed to the press, the shear, or the slitter through a Littell Straightening Machine. Coil stock comes out of a Littell Straightener flat, with curvature removed. Equipped with variable speed transmissions, Littell Straighteners are easily adjusted to meet a wide range of speed requirements. Thirteen medium and heavy duty models straighten coil stock of all standard widths and thickness.

WRITE FOR CATALOG

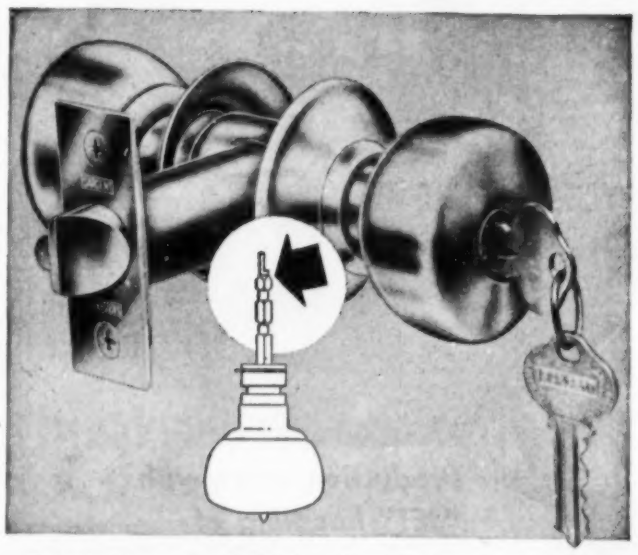
F. J. LITTELL MACHINE CO. — Speed with Safety

ROLL FEEDS • DIAL FEEDS
STRAIGHTENING MACHINES
REELS • AIR BLAST VALVES
District Offices: Detroit, Cleveland

4133 N. RAVENSWOOD AVE., CHICAGO 13, ILL.

If you write maker identify as IEN - 14159

National Retaining Rings cut costs again!



This handsome new DuaLock, offered by Sargent and Company of New Haven, Conn., is the result of many years of engineering research.

Its simplicity, sturdy safety, ease of application and beauty of design assure a constantly increasing demand. Because of the skill with which fine precision parts are built into this greatly simplified lock it requires only an exceptionally small cross bore.

By using National retaining rings Sargent saves material, weight, space and assembly time—without sacrificing efficiency or strength.

Examine your products—metal, wooden or plastic. Many products as well as many machines can be redesigned to use retaining rings. Groove your shafts instead of wastefully cutting down larger shafts to form shoulders. And groove your housings too.

Our high grade steel rings assure greater savings and greater margin of profit.

Let us show you how retaining rings can do an efficient job for you. These inexpensive, efficient artificial shoulders save time, save weight, save space, save materials, save money.

Write today for descriptive folder of many types of National retaining rings.

THE NATIONAL LOCK WASHER CO.

NEWARK 5, NEW JERSEY • MILWAUKEE 2, WISCONSIN, U.S.A.

If you write maker identify as IEN - 14161

How cost-wise buyers rate
STANDARD STOCK
GEARS

IN STOCK AT 92 BOSTON GEAR DISTRIBUTORS
at Factory Prices

Look under "Gears" in the Yellow Classified Section of your Telephone Directory for the one nearest you.

Get the 384-page BOSTON Gear Catalog . . . industry's most valued "textbook" of drive design and maintenance. Ask your BOSTON Gear Distributor, or write Boston Gear Works, 63 Hayward St., Quincy 71, Mass.

If you write maker identify as IEN - 14162

"TEFLON"
Sheets, Tubes, Rods, Tape & Gaskets
already pressed and molded
are available to those who wish to fabricate their own finished rings, bushings, machined parts and other items.

Also
Packings and Gaskets
made of asbestos, rubber, neoprene, Koroseal, Tygon and Kell-F can be obtained.

Other items include rubber hose, V belts, conveyor belts, transmission belts, molded products and tubing.

Sentinel
RUBBER & MECHANICAL PACKING COMPANY

Write for information, illustrated literature and prices

P. O. BOX 58
HATBORO, PA.

If you write maker identify as IEN - 14163

the BIGGEST BUY in BLOWERS

600 cfm
Only
$25.00

Big six inch blower wheel.
Totally enclosed motor
with thermal cutout. 110 volts, 60 cycles.

For removing fumes, cooling, ventilating and similar uses, order direct from

STANDARD ELECTRIC
MANUFACTURING COMPANY
WEST BERLIN 12, N. J.

If you write maker identify as IEN - 14164

TUMBLING . . Twin drum assembly for work loads to 400 pounds per drum

Source: TUMBLING SALES & SERVICE CO.
King St., Dept. IEN, Greenwich, Conn.

Drums lift straight up

Burring, radius forming, surface finishing and burnishing are intended applications for this new Esbec Super Twin tumbling barrel. The machine can be employed in regular production lines on small parts. It is suited also for pilot run applications to make comparative tests of abrasives, compounds, burnishing media. Three interchangeable drum sizes measure 16, 20 and 24 in. in diameter across the flats by 8, 10 and 12 in. in width.

Drive is by a ¾-hp. 220/440-volt three-phase motor for any one of three single speeds at 20, 25 or 30 rpm. A three-speed assembly operates at 6, 12 and 24 rpm. and a variable speed unit provides either of two ranges between 8 and 22 rpm. or 10 and 27 rpm. Other ranges, in ratio of 2.7 to 1, can be specified. The motor has forward and reversing control.

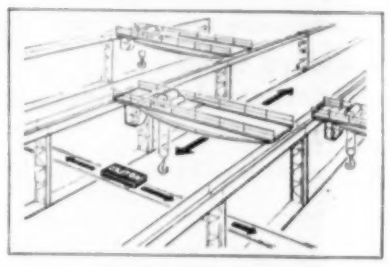
The drums are supported on inboard and outboard pillow block bearings of self-aligning design in a pressed steel housing open at the top and bottom. The drums are counter weighted to compensate for the door weight and are equipped with eyes so they can be lifted out of their bearings by means of overhead equipment. A hose connection to both hot and cold water, at the rear of the center compartment, can be attached to the rinsing door of either drum.

A screening device can be located under each drum to separate parts from the tumbling media when the drums are emptied. An interval timer can be mounted on the housing and connected into the control so operation will start by itself at any desired time during an "off" period. Overall dimensions are about 59 by 40 by 59 inches. Shipping weight is about 1,000 pounds.

If you write maker identify as IEN - 14165

HANDLING . . Electric transfer car for push button control between bays

Source: EASTON CAR & CONSTRUCTION CO.
Holly & Liberty Sts., Easton, Pa.



Supplements cranes

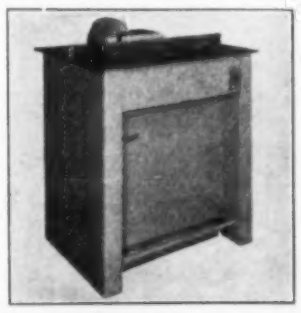
Illustrated is schematic layout showing the range of action between the company's new motor driven cross-bay transfer car and overhead cranes operating in parallel bays. The car is available to specification to meet given installation and load handling requirements. It is basically platform design but can be equipped with special superstructures.

Operation is on a track set flush with the floor and, in usual practice, the car is equipped with skirt plates to protect workers. Construction is in welded steel with mounting on chilled tread wheels and roller bearings in outside journal boxes. Operation can be controlled by push buttons from a remote station or at a position on the car. Limit switches stop the car at its limits of travel.

If you write maker identify as IEN - 14166

SAWING . . Circular blade machine for aluminum, copper, silver tube

Source: RHODE ISLAND ENGINEERING & MFG. CORP.
572 S. Water St., Providence 3, R. I.



Practically no burr

High speed steel is employed in the circular blade on this new Model 2 machine. It is driven by a belt connected 1-hp. motor at 8,000 fpm. and is mounted on a ball bearing spindle. The blade is supplied in 7 or 8 in. diameter. The latter will cut tube to 2 3/16 inches.

The spindle is mounted in a carriage that is moved forward by depressing a treadle bar at the front of the housing. It retracts to the rear, beneath a cast guard, when the treadle is released. Work is held there by hand.

Construction includes a switch to start and stop the motor. Drive connection is a Gilmer toothed belt. Overall dimensions are 32 by 23 by 41 in. and weight is about 800 pounds. The machine employs an internal chute and scrap drawer that receives the cuttings. It is drawn out and emptied from time to time. The machine bearings are sealed.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

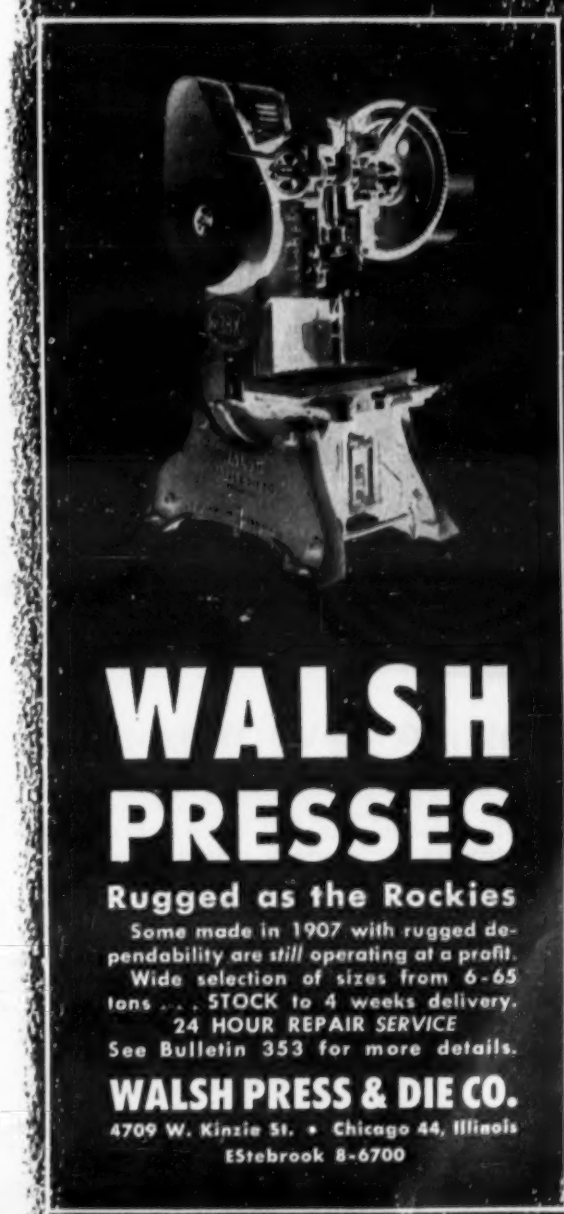
If you write maker identify as IEN - 14167

MERRILL MATERIALS HANDLING DEVICES

3-M-2

MERRILL BROTHERS
56-14 ARNOLD AVENUE MASPETH, N. Y.

If you write maker identify as IEN - 14168



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SIMPSON ELECTRIC COMPANY SIZE CONTROL COMPANY
WALSH PRESS & DIE COMPANY

If you write maker identify as IEN - 14170

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Folding Chair Manufacturer

Bostitch Foot-operated Stapler

A high arm stapler that adapts readily to a wide variety of stapling jobs. Shown here fastening plastic upholstery to chair seat. Also used for carding, assembling wooden toys, fastening wooden drawers, sealing packages of parts. Staples can be formed into a number of shapes. Low model available for seated operator. Easily motorized. Write for complete information on foot and motor operated stapling machines. Bostitch, 652 Mechanic Street, Westerly, R. I.

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If you write maker identify as IEN - 14171

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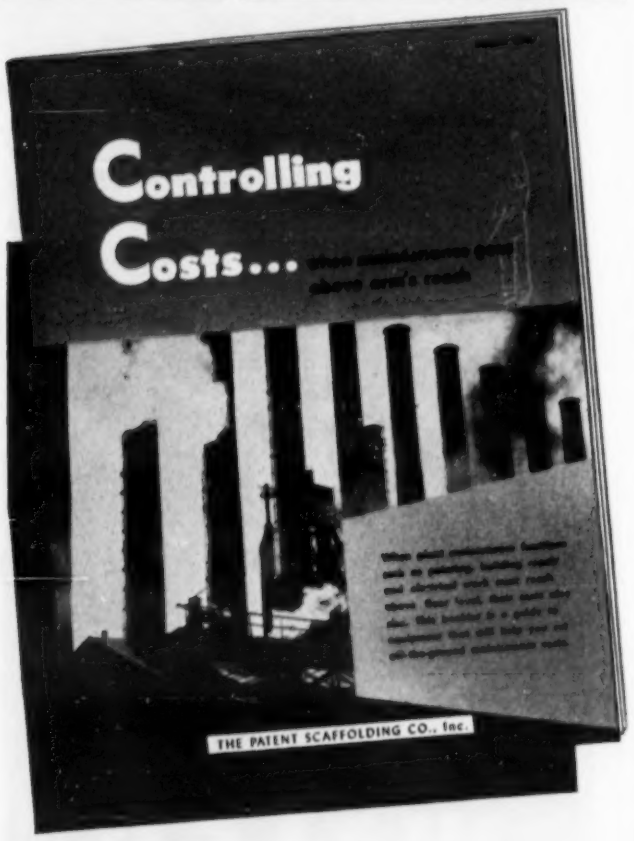

how to save money in maintenance . . .

Send for this complete guide to the right scaffolds and ladders for cleaning, painting, electrical work, plant and equipment maintenance, etc. It lists types of jobs and tells you which equipment is best for each. It's packed with pictures and ideas on how to cut your off-the-ground maintenance costs and increase safety. Years of scaffolding know-how condensed for you . . . and it's yours without cost.

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Position_____

Company_____

Address_____

City_____ Zone____ State_____

If you write maker identify as IEN - 14173

TESTING . . Electronic equipment finds faults in multi-conductor cables

Source: BERKELEY SCIENTIFIC DIVISION
2202 Wright Ave., Richmond, Calif.

For continuity, leakage

Stepping switches employed in this new Model-4110 cable tester scan the leads in a multi-conductor cable rapidly and in sequence to a predetermined pattern. Code numbers, representing any discrepancies, are printed on a standard adding machine tape. It can be secured to the cable for record or as a guide for correction following the inspection operation.

The equipment can test a 32-pin cable in about 4 minutes. It can be applied to a variety of cable terminating connectors by means of adapter sockets. The complete circuit of the tester itself can be checked for correct operation in a few seconds by means of a test switch on the front panel.

If you write maker identify as IEN - 14174

GRINDING . . Mounted points to burr, clean, polish metals, plastic

Source: ATLANTIC ABRASIVE CORP.
502 Pearl St., South Braintree 85, Mass.

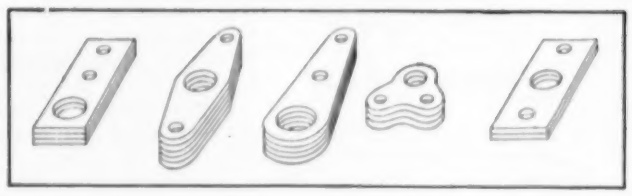
For finishing operations

Grades range from hard No. 0 to soft No. 5 in this new line of Nu-Tex abrasive points. The abrasive is bonded in place with a special resin to produce an even smooth finished surface on the work and to minimize hand operations. The abrasive will not clog or load on soft metals. The points are manufactured in grit sizes ranging from 16 to 320. The shanks are ¼ in. in diameter by 1 in. in length.

If you write maker identify as IEN - 14175

SHIMS . . Five standard shapes in aluminum, steel, stainless steel

Source: THOMAS ASSOCIATES
4605-9 Alger St., Los Angeles 39, Calif.



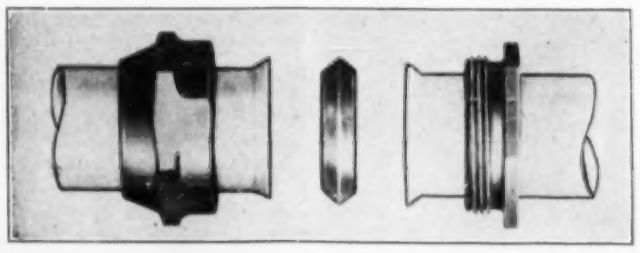
Samples upon request

The laminations in this new line of anchor nut or reinforcing shims are secured firmly together so they will not separate easily. The shims are available in five standard shapes as shown in the illustration. Sizes range from No. 6 to ⅜ in. bolt hole. Thickness varies in 1/64 in. increments. The company has prepared an engineering manual containing complete specifications.

If you write maker identify as IEN - 14176

TUBE FITTING . . Threaded connector clamps on tube, 1 to 2½ inches

Source: RUBBER TECK INC.
19113-17 S. Hamilton St., Gardena, Calif.



Details in Sheet 1102R

A socket with internal threads, a double taper insert ring and a clamping nut make up the three-part assembly of this new tube connector. Application is on tubes with flared ends to make a tight connection for air or liquids in temperatures to 500 deg. F. The parts are available in aluminum or stainless steel. An inspection gap shows between the outer surface of nut and socket when the insert is placed correctly.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14177

GARLOCK LATTICE BRAID* PACKINGS

BRAIDED THROUGH AND THROUGH FOR LONGER SERVICE, LESS MAINTENANCE

Every strand of LATTICE BRAID packing passes diagonally through the body of the packing to form a completely unified structure—braided internally as well as externally.

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GARLOCK

If you write maker identify as IEN - 14178

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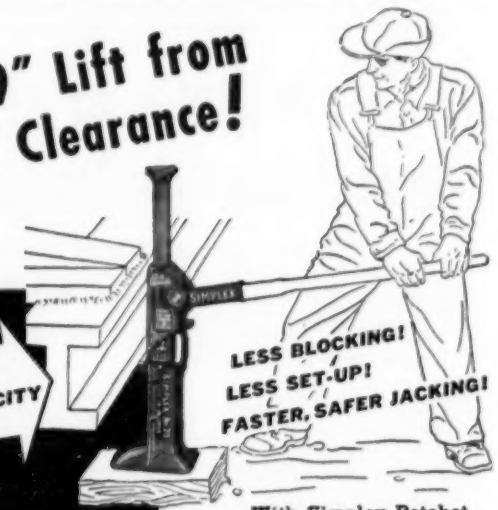

SIMPLEX RATCHET LOWERING JACKS

Lift or Lower Notch-by-Notch—Cannot be Tripped

With Simplex Ratchet Lowering Jacks a minimum of toe clearance is required—and only Simplex Jacks provide equal lift capacity on *toe or cap*. In fast jacking action, all-purpose utility, extra safety features and rugged strength for longer life, Simplex Ratchet Lowering Jacks give you more for your money! Capacities of 1½ to 35 tons. Write today for Bulletin: Industrial 49.

SAFETY SUGGESTION—Use thin wood block—don't lift or lower steel against steel.

Simplex LEVER · SCREW · HYDRAULIC Jacks

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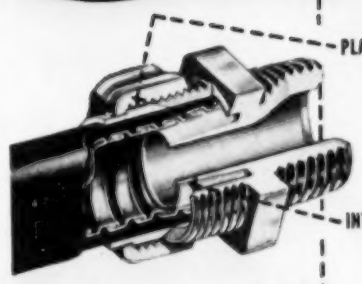
2527 Gardner Road Broadview, Illinois

If you write maker identify as IEN - 14179

NEW T&B ENGINEERED

CONNECTORS FOR LIQUID-TIGHT FLEXIBLE METAL CONDUIT



PLASTIC GRIPPING RING
- Seals out all moisture, oil, and corrosive fluids.
- Protects plastic conduit sheath against damage.
- Gives visual installed assurance of a proper ground.
- Color-coded for each conduit size.

INTEGRAL TAPERED BODY WEDGE
- Positively grounds metal spiral inside conduit.
- Fits all thicknesses and convolutions in standard Liquid-Tight Flexible Metal Conduit.
- Grounding member integral with body.

Self-grounding . . . no complicated assemblies. Conduit slides straight into complete connector—no need to disassemble connector. Same wrench fits both body and gland nut. For conduit from ⅜" to 2". Straight connectors, 45° and 90° elbows available. Write for folder. T323

THE THOMAS & BETTS CO.
INCORPORATED
60 Butler Street, Elizabeth 1, New Jersey
Thomas & Betts Ltd., Montreal, P.Q., Canada

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Denison offers one of the most extensive lines of hydraulic pumps, fluid motors, and pressure and directional controls now available for high-pressure systems ranging to 5000 psi. In all kinds of applications requiring smooth, efficient hydraulic *power, pressure,* or *motion* with accurate control, Denison HydrOlLic components have proved they stand up longer and cost less, under hard, continuous operation. Write for Denison catalogs on any hydraulic equipment you need.

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If you write maker identify as IEN - 14181

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another Walker-Turner
LIGHT-HEAVYWEIGHT
to Knock Down Equipment Costs

Now, Walker-Turner brings you another *Light-Heavyweight* champ . . . another opportunity to reduce equipment costs. It's a 16" Band Saw with all the quality and efficiency features you want . . . with all the capacity and durability you need for a wide range of jobs, metal, plastic or wood. And, at a PRICE MUCH LOWER than you have ever known for any comparable machine!

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***Quick-change Variable Speed Drive.** As easily as dialing a radio, you turn the hand wheel and change blade speed *smoothly*, while machine runs. No need to change belts, pulleys. Speed shows on a graduated scale.

And Improved Saw Guides, Carter Jiffy Tires, extra weight, available accessories. GET ALL THE FACTS. Just phone local Walker-Turner Distributor or send coupon.

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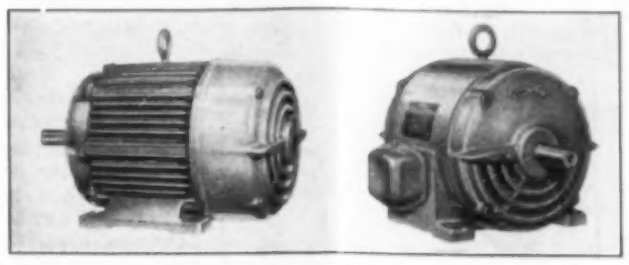
Use this space
to send for full details and specifications.
Walker-Turner Division, Kearney & Trecker Corp.
Dept. IE-12, Plainfield, N. J.

If you write maker identify as IEN - 14183

MOTOR . . Squirrel cage induction in new NEMA frame sizes to 40 hp.

Source: LOUIS ALLIS COMPANY
425-29 E. Steward St., Milwaukee 7, Wis.



Technical data in Bulletin 1600

Open type drip proof, totally enclosed fan cooled, and explosion proof enclosures are included in foot and Types-C and D flange motors in the company's new L. A. line of squirrel cage induction motors. The open design starts at ½ hp. at 900 rpm. in new frame size 182. It is maximum at 40 hp. in the new frame size 326S at 3,600 rpm. The new totally enclosed design also starts at ½ hp. at 900 rpm. in the new frame 182 and is maximum at 25 hp. at 3,600 rpm. in new frame size 326S. Both motors are available also for operation at 1,200 and 1,800 rpm. in corresponding intermediate frame sizes.

Construction includes modern styling, adequate ventilation, factory lubricated grease type bearings with grease fittings to specification, a split type conduit box with a lead identification spacer that cannot be lost, an alternate conduit arrangement for the open drip proof design in place of the conduit box.

Stator housings in both enclosures are sufficiently long to protect the coil ends from damage during manufacture and during times that the motor is taken apart by the user for inspection or maintenance. A removable plug, on the front end bearing, permits speed checking. Price is the same as the company's previous designs in the old NEMA frame sizes.

If you write maker identify as IEN - 14184

TESTING . . Moisture indicator for use in fabrics, paper, plastics

Source: CAMBRIDGE INSTRUMENT CO.
3710 Grand Central Terminal, New York 17, N. Y.

Measures actual humidity

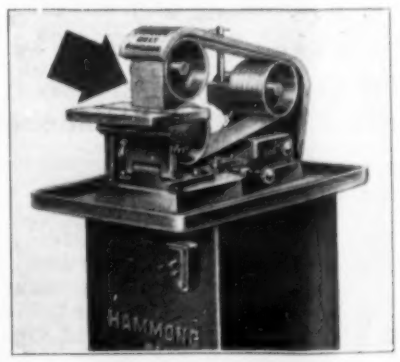
The mechanism in this new indicator is enclosed in a light plastic housing provided with a handle and in a thin hollow chromium plated blade measuring 1 in. in width by 18 in. in length. A portion of the blade is perforated on both sides. The enclosed sensitive element changes in length with changes in moisture to move the indicator pointer across its scale.

The scale is calibrated in a range of 10 to 90 per cent relative humidity. A red manually positioned index pointer marks a significant reference point, such as room humidity, when making comparative readings. This pointer is set by turning a knurled screw on the handle. The difference in reading between the index pointer, after it has been positioned to room humidity, and the active black pointer is the difference, in terms of relative humidity, between moisture in the tested material and moisture in the room atmosphere.

If you write maker identify as IEN - 14185

GRINDING . . Abrasive belt to finish sharpen carbide tools

Source: MINNESOTA MINING & MFG. CO.
902 Fauquier St., St. Paul 6, Minn.



Tri-M-ite Resinite

Illustrated in place on the Hammond machine, previously described IEN-12857-53, is the company's new silicon carbide abrasive belt. It, and the machine, have been developed to finish sharpen carbide tools, following a rough grinding operation on a silicon carbide wheel. The belt is a standardized 4 by 54-in. unit for use with this type of machine, not only on carbide tools but also on high speed tools and for general finish grinding of hard materials.

Hard blue mineral grains are electrostatically oriented, bonded with glue and sized with resin on a paper backing that tests to 130 lb. per in. of width. The belt will withstand rough handling and can be used without softening when oil is employed in the grinding operation. A new "uni-caliper" splice is employed for continuous smooth operation. The company is prepared to supply a special stick coolant for use on the belt in carbide grinding. Grits range from 60 to 150.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14186

YOU CAN DO IT AT LESS COST with HANSEN
ONE-HAND TACKER

MODEL T-2 TACKING SEAT COVERS

Only ONE of 1001 Uses

FASTER! With its zip-zip compound leverage action, Hansen saves time in all types of tacking and fastening. Fast, easy one-hand operation. Tacks fast as you grip. Leaves one hand free.

BETTER! Balanced design insures accurate, precision driving. Powerful action drives each staple firmly and neatly in place for improved quality and increased holding power. It is adaptable to a wide variety of uses — screens, insulation, TV wires, etc.

AT LESS COST!

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36 DIFFERENT MODELS
80 STAPLE SIZES

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U. S. ROYAL CORDS AND CABLES

For light, power and control applications, United States Rubber Company offers a complete line of electrical conductors, power cables, flexible cords, flexible power cables, signal and communication cables.

For more information write the nearest U. S. Rubber Branch or the address below.

UNITED STATES RUBBER COMPANY
Electrical Wire and Cable Department, Rockefeller Center, New York 20, N. Y.

If you write maker identify as IEN - 14188

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designed for comfort while working

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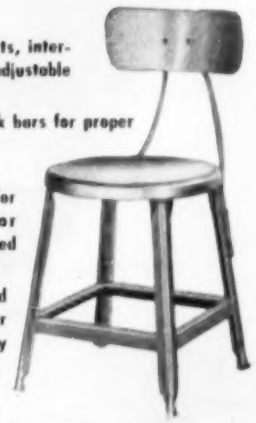

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JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 14189

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Send for this *FREE* Bulletin

Reverse Air Jet cleaning of filter tubes is the most important improvement in cloth dust filtering developed for industrial plants during the past 50 years. This Bulletin (No. 528) contains new information on dust control.

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DAY SINCE 1881 — DUST CONTROL
A SINGLE UNIT OR A COMPLETE SYSTEM

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Compute the cost of time wasted by executives and employees running back and forth. *That's how much* the NEW Executone Intercom can save you! Your voice—with lightning speed—gets information, gives instructions. Every working hour becomes more productive for you and your employees. "Inside calls" no longer tie up telephone lines. Office and plant operate at a new peak of efficiency!

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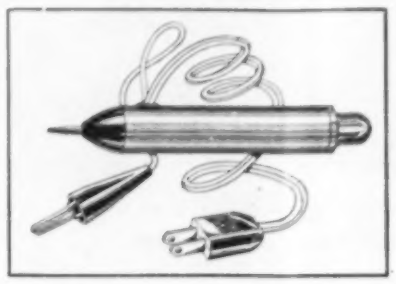
IN CANADA — 331 Bartlett Ave., Toronto

If you write maker identify as IEN - 14192

TESTING . . Neon lamp unit checks continuity in electric circuits

Source: REVAN PRODUCTS CO.
Box 549, Binghamton, N. Y.



Troubletracker AP-100-A1

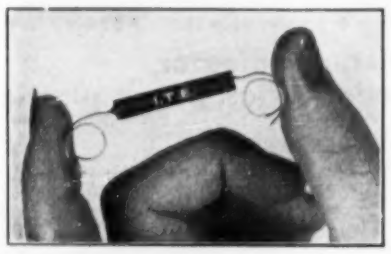
Troubletracker is a new assembly of neon lamp, selenium rectifier and filter with probe equipped lead and housing and with an extension and plug for a 110-volt 60-cycle circuit. Input through the rectifier provides ½ ma. dc. for connection into a circuit under test. If the circuit is closed the neon lamp at the end of the aluminum housing will glow. The unit can be employed to detect open or shorted condensers and to trace circuit continuity through high or low resistance elements. The housing measures ⅞ in. in diameter by 4½ in. in length. Construction is in aluminum and plastic. List price is $3.50.

A second unit, known as the Continuity Tester, is a low voltage assembly operating on a flashlight battery to perform essentially the same operations as the large one. It measures ⅞ in. in diameter by 3½ in. in length. List prices are $3.50 and $1 respectively.

If you write maker identify as IEN - 14193

RESISTOR . . Sub-miniature unit, sealed, for use in electronic circuits

Source: I-T-E CIRCUIT BREAKER CO.
1924 Hamilton St., Philadelphia 30, Pa.



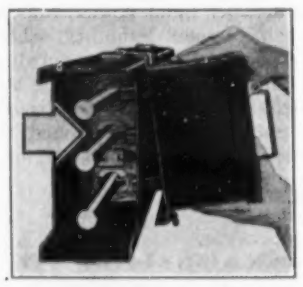
On quantity order

Type A3606CG is a new hermetically sealed resistor measuring $\frac{3}{16}$ in. in diameter by 1⅛ in. in length. It is available to specification with rating at 10 watts. Tolerances to 0.1 per cent are standard. Maximum resistance is 500,000 ohms, using Evenohm wire or its equivalent. Lead wires are 22-gage tinned copper, 1½ in. in length.

If you write maker identify as IEN - 14194

ELECTRIC DUCT . . Plug-in design with insulating bus bar supports

Source: SQUARE D COMPANY
6058-62 Rivard Street, Detroit 11, Mich.



Branches plug in

New design of the company's Plug-In electric duct employs a bus bar insulator and support with ability to withstand high short circuit stresses. The duct can be assembled for either vertical riser or horizontal installations. Duct sizes with 225, 400 and 600 amp. ratings, with one round bus bar per phase, can withstand short circuit stresses produced by currents to 25,000 amperes. Larger sizes with 800 and 1,000 amp. ratings, using two round bus bars per phase, can withstand stresses by currents to 50,000 amperes.

If you write maker identify as IEN - 14195

COMMUNICATING . . Teleprinter sends and receives 100 words per minute

Source: KLEINSCHMIDT LABORATORIES INC.
County Line Road, Dept. IEN, Deerfield, Ill.

Instantaneous action

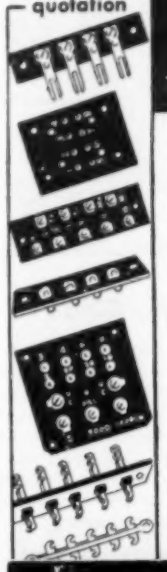
New teleprinter is operated by a keyboard, similar to that on a standard typewriter, to send and receive through an electronic circuit with wire or radio connection between two or more remote points. The machine is an adaptation of one originally developed for the Armed Forces. It weighs 45 pounds. It also is available in connection with a typing re-perforator and tape transmitter. When the tape is employed the machine will send and receive a maximum of 15 characters per second. The message is printed on a page width sheet of paper that issues from the housing top.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

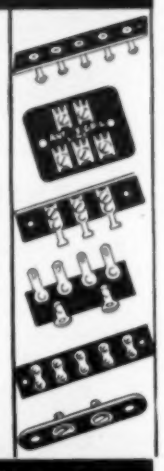
If you write maker identify as IEN - 14196

Send your specifications for prompt quotation

Hundreds of standard
JONES
TERMINAL PANELS
Complete Equipment
FOR
SPECIALS



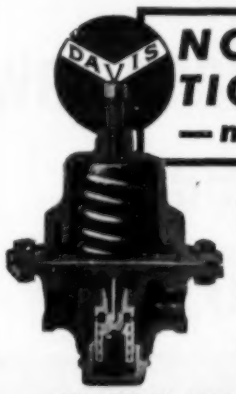
Several pages of Jones Catalog No. 18 illustrate standard and special panels we are constantly producing. Latest special equipment enables us promptly to produce practically any panel required. Send print or description for prices, without obligation. Hundreds of standard terminal strips also listed. Send for Catalog, with engineering drawings and data.



JONES MEANS
Proven QUALITY

Jones
HOWARD B. JONES DIVISION
CINCH MANUFACTURING CORPORATION
CHICAGO 24, ILLINOIS
SUBSIDIARY OF UNITED-CARR FASTENER CORP

If you write maker identify as IEN - 14197



NON-STICKING! TIGHT CLOSING!
—no pressure build-up

DAVIS NO. 13
AUTOMATIC PRESSURE
REDUCING VALVES

- **FOR MANY USES—**
  No. 13 regulator designed for reduced flow requirements in heating equipment, vulcanizers, molding presses, steam kettles, etc.
- **EXCLUSIVE DESIGN—**
  Single seated, tight closing, non-sticking. Large diaphragm, sensitive pressure adjustment. Compact, rugged, self-contained. Orifice type insures high lift, low maintenance.
- **TROUBLE-FREE SERVICE—**
  Built-in Strainer, finest quality, all internal parts accessible and renewable without disturbing piping.
- **FOR STEAM, AIR OR GAS—**
  For initial pressures to 250 p.s.i.; reduced pressures, 1 to 100 p.s.i. Sizes from ⅜" to 2". Bronze or semi-steel bodies; bronze or stainless trim. Economical for use on small units.

Write for Bulletin 200

Davis
DAVIS REGULATOR COMPANY
2529 South Washtenaw • Chicago 8, Illinois

If you write maker identify as IEN - 14198

save time
ENGRAVE
in your own shop

Lowest set-up time for unskilled labor

CALIBRATIONS | PROFILES | CURVED SURFACES

10,000 IN USE Accepted by all leading manufacturers as the speediest, most versatile portable engraver. Only the NEW HERMES has these patented features:

- Adjustable for 15 ratios.
- Self-centering holding vise.
- Automatic depth regulator.
- Adjustable copy holders.

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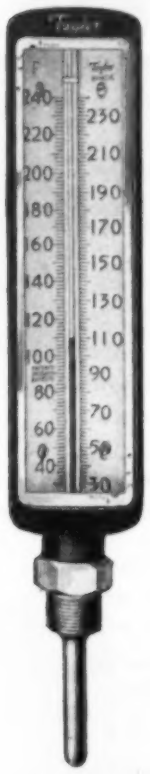
NEW HERMES ENGRAVING MACHINE CORP.
13-19 University Pl., New York 3, N. Y.

If you write maker identify as IEN - 14199

IT'S SAFER TO BUY TAYLOR THERMOMETERS



WHEREVER your equipment needs a dependable temperature check, it's safer to specify Taylor Industrial Thermometers. Then you'll *know* you're getting the lifetime accuracy and performance you paid for.

The name "Taylor" means "Accuracy First" the world over. Thousands of Taylor mercury-in-glass Industrial Thermometers now in use speak for themselves in terms of trouble-free performance. And of course, every Taylor Instrument is backed up by Taylor's complete national sales service.

Taylor Industrial Thermometers are available in a wide variety of bulb forms, stem angles, and temperature ranges within limits of —40° to plus 950°F. or equivalent Centigrade.

All ranges up to 750°F. have exclusive 3-times-easier-to-read BINOC* tubing; tubes aged for lasting accuracy; built-in shock resistance and many other features.

Write for Taylor Catalog E.
Taylor Instrument Companies
Rochester, N.Y., and
Toronto, Canada.

*Reg. U.S. Pat. Off.

TAYLOR INSTRUMENTS MEAN ACCURACY FIRST

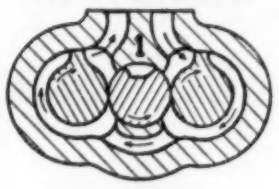
If you write maker identify as IEN - 14200

BERRY Rotating Piston PUMP or MOTOR

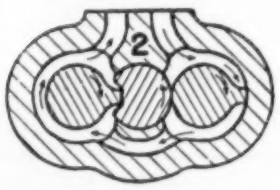
Operation as a pump or as a motor is continuous, smooth, quiet, without pulsation. Basic simplicity gives the design long life with low maintenance as pumps in elevator service or on machine tools. Used as transmission in oil fields, mines, steel mills, mobile vehicles, the rugged construction endures many thousands of hours of rough treatment in all climates without servicing.

AS A MOTOR

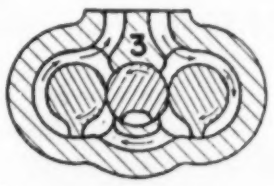
All three members are geared together in a 1:1 ratio. Input shaft is on center member.



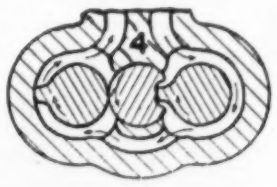
POSITION 1..Both pistons facing up, oil entering the right-hand port, driving both pistons in clockwise direction, exiting through the left port.



POSITION 2..Both pistons rotated to right, oil bypassing the left-hand one to the exit. The right-hand piston sealing against the center rotor or rolling seal.



POSITION 3..Both pistons rotated to face down, the oil driving both while the center rotor seals both pistons.



POSITION 4..Both pistons rotated to the left, the oil bypassing the right one and driving the left one. The left piston is sealing against the rolling seal.

Two pressure ratings are 500 and 1,500 PSI. Rating is 60 to 240 GPM. for the 500 PSI. assembly with one to four pumping chambers on a common shaft. Rating is 9.4 to 28.2 GPM. for the 1,500 PSI. pump with one to three chambers.

A third series of units, 32-10 model, is now available in one, two or three chambers. Capacities, as pumps, are 60, 120 and 180 GPM. Motor ratings to 300 horsepower and pressure are 1,000 psi. continuous; 1500 psi., intermittent.

CATALOG 5209

Explains action, shows sections and combinations, includes performance specifications and selection data.

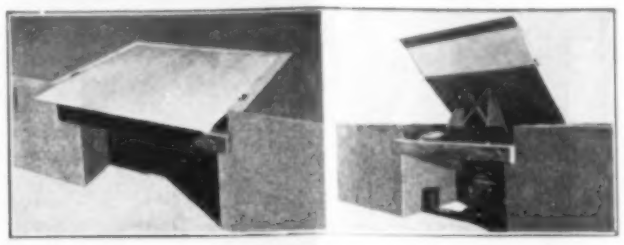
ALL MODELS OF ALL SERIES ARE AVAILABLE FOR IMMEDIATE SHIPMENT FROM STOCK.

Berry Division
Oliver Iron and Steel Corporation
1019 Oliver Building • Pittsburgh 22, Penna.

If you write maker identify as IEN - 14202

ELEVATOR . . Hand operated ramp raises and lowers in shipping platform

Source: LOOMIS MACHINE CO.
852 Industrial Ave., Clare, Mich.



Rates 5 ton

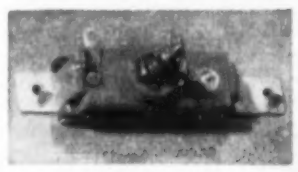
Flush assembly, without protruding levers, characterizes this new Type 72-F ramp in the company's line of counterbalanced hand operated equipment, previously described IEN-11901-52. The new ramp can be locked flush with a loading platform and traffic can be maintained freely over it without danger of encountering an obstruction.

Hand holds are provided on the two sides to raise the ramp surface prior to backing a truck into loading or unloading position. The non-skid top is then moved down to contact with the truck platform for regular action. Load capacity is 10 ton. Reach and width are 72 inches. List price is $895.

If you write maker identify as IEN - 14203

THERMOSTAT . . For appliance use, employs snap acting electric contacts

Source: WESTINGHOUSE ELECTRIC CORP.
511 Wood St., Dept. IEN, Pittsburgh 30, Pa.



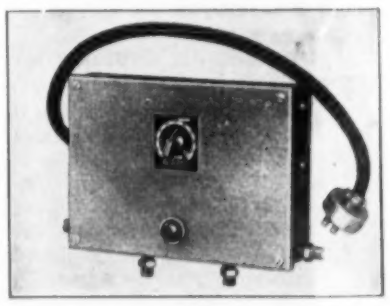
Nearly full size

Overall range is between minus 80 and plus 300 deg. F. for this new Tri-Snap thermostat. It is suited particularly for use in household appliances, air conditioners, refrigerators. It provides interference free operation due to its fast action. Point of operation is set by turning an adjusting screw. This screw can be supplied to meet given installation requirements. The unit also is available in non-adjustable assembly.

If you write maker identify as IEN - 14204

WELDING . . Shut-off control for gas and water to electrode holder

Source: MULLENBACH ELECTRICAL MFG. CO.
2302 E. 27th St., Los Angeles 58, Calif.



Conserves gas and water

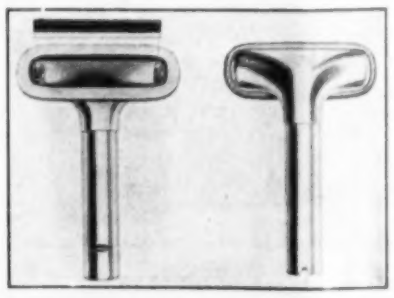
Valves in the housing of this new Gastrol control unit are closed by the action of a time-delay relay in order to shut off the flow in inert gas and cooling water to an arc electrode holder, after a predetermined cooling interval, upon stopping a weld. The valves reopen when the welder again strikes his arc. Flow continues until the next shut-off interval, again preceded by the delay.

The equipment is enclosed in a housing that measures about 10 by 3 by 7½ inches. Power is taken from a 110-volt ac. outlet. Connections are provided for both water and gas.

If you write maker identify as IEN - 14205

CLEANING . . Pick-up nozzle for use with a dry type vacuum machine

Source: BREUER ELECTRIC MFG. CO.
5130 N. Ravenswood Ave., Dept. IEN, Chicago 40, Ill.



Bristles are horse hair

A strip brush, flexibly located in the center of this new aluminum pick-up nozzle, loosens dust and dirt directly in the path of maximum suction of the vacuum machine on which the nozzle is employed. The new arrangement replaces a brush surrounded nozzle previously employed by the company. It can be removed from its holding clips for cleaning or replacement.

The nozzle is made of polished aluminum encircled by a resilient plastic bumper and fitted with a 6-in. shank that serves as a hand grip after insertion into the suction hose. The shank is notched to fit an extension handle.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14206

FULLER BRUSH makes PROMPT DELIVERY

on stock sizes
FULLANCHOR WIRE WHEEL BRUSHES

You Deal Directly with us.
Manufactured . . . Guaranteed . . . and Sold by . . .

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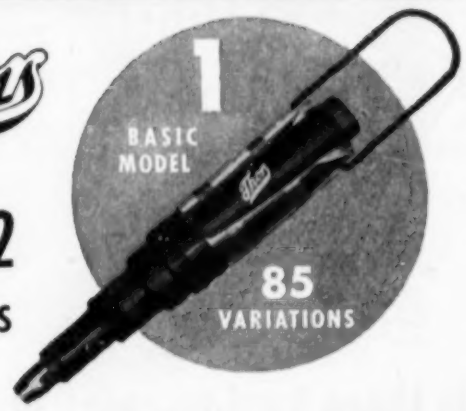
Power driven brushes, Factory & Institutional cleaning tools, Waxes & Detergents

If you write maker identify as IEN - 14207

SPECTACULAR PRODUCTION, REAL AIR TOOL ECONOMY

Thor



No. 2 Series

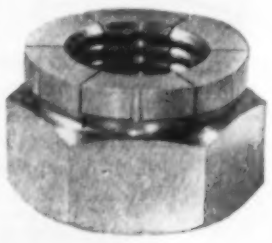
DRILLS • SCREWDRIVERS
NUTSETTERS • GRINDERS

ONE unified "family" of *85 light weight air tools* with interchangeable handles, gear cases, chucks, spindles, screwdriver and nut setter attachments. Simplifies all your air tool problems in this class. For catalog, write Thor Power Tool Company, Aurora, Ill.

TOOL MAKERS FOR SIXTY YEARS

If you write maker identify as IEN - 14208

one standard FLEXLOC SELF-LOCKING NUT



covers temperature range to 550°F

Because they are all metal and require no auxiliary locking device, FLEXLOCS lock and stay tight even at higher temperatures. See your local industrial distributor for literature and samples or write SPS, Jenkintown 14, Pa.

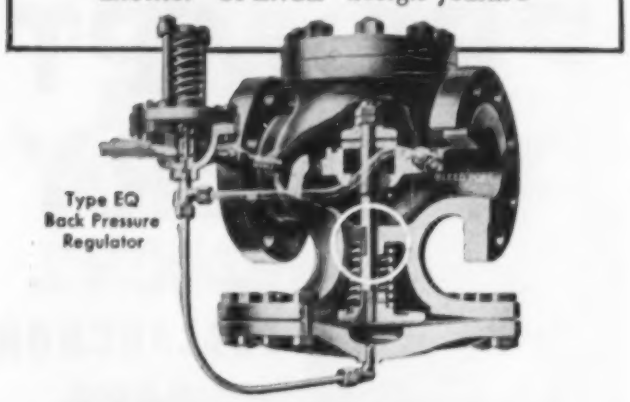
Our Fifth Year : A START FOR THE FUTURE

FLEXLOC LOCKNUT DIVISION

SPS
JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 14209

another SPENCE *design feature*



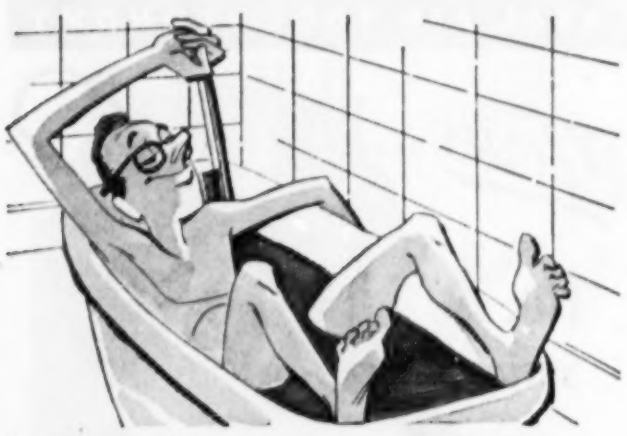
No Stuffing Boxes..

In Spence regulators all main valves and most pilots are built without stuffing boxes. This packless construction is made possible by the use of a large balanced metal diaphragm which eliminates the need for closely fitted parts. Result? More accurate regulation. • Valve stem wear is also reduced in the Spence packless design. Result? Low maintenance, years of trouble-free service • Write for Bulletin 500 giving full details of complete Spence line of automatic regulating valves.

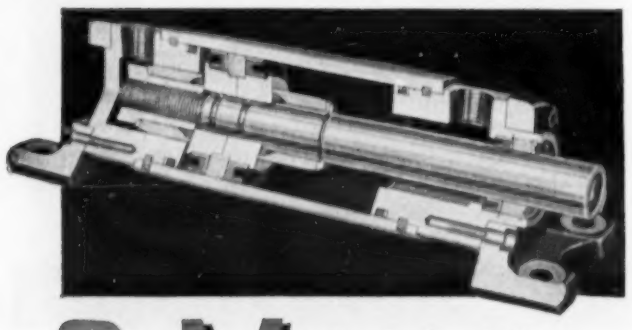
SE-125

SPENCE ENGINEERING COMPANY, INC.
WALDEN, NEW YORK

If you write maker identify as IEN - 14210



in those hard-to-reach places...



O-M (air • hydraulic) CYLINDERS

fit where others won't!

O-M's SPECIAL INTERLOCKING MECHANISM, which does away with projecting tie rods and end caps, answers the old problem of how to get the necessary power when space is a factor. O-M Cylinders require ⅓ *less installation space* than conventional cylinders with the same bore . . . and can be turned down to fit easily into the deep recesses of machine bases and equally hard-to-reach spots. They're ALL-STEEL with bearing bronze—no castings.

And O-M has the lowest coefficient of friction *of any* cylinder . . . smoother operating at low or high speeds regardless of length of stroke. End plugs tapped for universal mounting. Any one or combination of mounting brackets may be used to install *without disassembling or changing cylinder.* Easily removed, inspected, repaired.

Available in a full range of sizes (1½ to 8" bores) with standard, 2 to 1 or oversize rods. Completely interchangeable parts.

Write today for FREE catalog and complete set of ½- and ¼-scale templates showing all cylinders and mounting brackets.

14 day delivery on most sizes

MAIL COUPON TODAY!

ORTMAN MILLER MACHINE CO.
1208 150th Street • Hammond, Indiana
☐ Please send latest O-M catalog. ☐ Complete set of templates.
Name.....
Company.....
Address.....
City.....Zone.....State.....

If you write maker identify as IEN - 14212

TRANSFORMER . . For machine control holds voltage on peak circuit loading

Source: ACME ELECTRIC CORP.
26 Water St., Cuba, N. Y.

50 to 1,500 va. capacity

New transformer compensates for the inductive low-power factor characteristics of control equipment such as contactors, relays, solenoids, switches normally employed in machine control circuits. It holds the voltage for split second operation of the control devices in a predetermined sequence by supplying the maximum momentary current demand with a minimum voltage drop. It is designed for use on equipment requiring power input that rates 220 or higher voltage. It steps this down to 110 volts for control purposes. Each unit is supplied with a metal nameplate bearing its electrical specifications and a connection diagram.

If you write maker identify as IEN - 14213

CONNECTOR . . Plastic splice cap screws on to grip stripped wire ends

Source: IDEAL INDUSTRIES INC.
1108 Park Ave., Sycamore, Ill.

Distinctive green

Two or three No. 14 to No. 18 wires can be twisted together and secured in this new molded plastic connector. Its smooth internal threads twist the wires and grip them tightly but do not cut them. The plastic has high impact strength and dielectric properties. It will not absorb moisture and is not subject to attack by most chemicals. It is suited for temperatures to 400 deg. F. Packing is in cartons containing 1,000.

If you write maker identify as IEN - 14214

TRUCK . . Clamp attachment, hydraulic, to handle hogsheads

Source: MERCURY MFG. CO.
4132 S. Halsted St., Chicago 9, Ill.

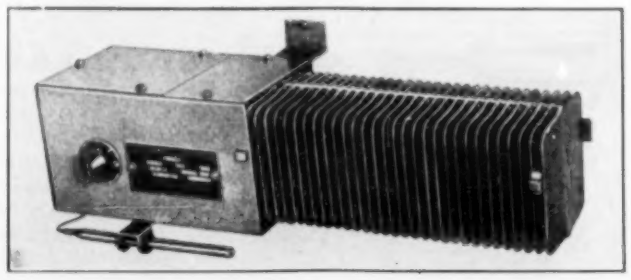
Capacity to order

New clamp shown in the illustration will pick up a hogshead measuring 48 in. in diameter and weighing 1,500 pounds. It will carry, turn and stack it horizontally or vertically. The hydraulic design maintains continuous positive clamping action with control centered at the operator's position on the truck. Two bolts hold the attachment on the truck carriage in place of the standard forks. It can be put on or removed in a few minutes.

If you write maker identify as IEN - 14215

HEATING . . Electric space unit for pump rooms, valve pits, cranes

Source: ELECTROMODE CORPORATION
43-47 Crouch St., Rochester 3, N. Y.



List price with wall brackets is $29.50

Safe operation characterizes this new electric space heater with its sealed cast aluminum heating element. There are no exposed red hot wires and no danger of fire, electric shock or burn. The heater is available for operation on 110 or 220-volt single-phase ac. Input rating is 500 watts. The unit carries Underwriters' Laboratories Approval. A built-in thermostat can be set for desired temperature. The unit is designed particularly for local application where there is danger of equipment freezing or of discomfort for a worker.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14216

REALOCK FENCE

saves you money

. . . Saves cost of extra guard personnel
. . . Cuts cost of ground maintenance
. . . Cuts down pilferage losses
. . . Makes possible lower insurance rates
. . . Guards against loss from burglary and vandalism.

Consult your classified telephone directory for nearest sales office or write to any of our three division offices for free estimate or catalogue.

THE COLORADO FUEL AND IRON CORPORATION—Denver and Oakland
WICKWIRE SPENCER STEEL DIVISION—Buffalo

REALOCK FENCE
THE COLORADO FUEL AND IRON CORPORATION
BRANCHES IN ALL KEY CITIES CFI

2013

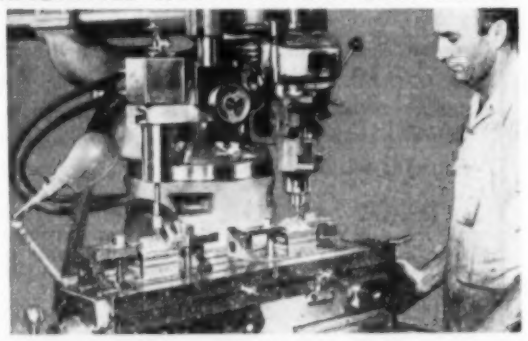
If you write maker identify as IEN - 14217

Turchan

HAS WHAT INDUSTRY NEEDS IN THE TREND TO

Automation

MODERNIZE YOUR PRESENT MACHINES WITH TRACER-CONTROLS



- Turchan controls or machine tools modernize your production with automatic duplicating
- Accuracies to .001" plus finer surface finish
- Reduces production costs up to 1000%
- Set-up time seldom requires over 30 minutes

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TURCHAN FOLLOWER MACHINE CO.
8259 LIVERNOIS AVENUE • DETROIT 4, MICHIGAN

If you write maker identify as IEN - 14218

FOR UNEXPECTED PROFITS in Your Shop

ask yourself these questions:

• Could you increase productivity and profits by fast rearrangement of machines to meet new production needs, with "down time" all but eliminated? • Could you benefit by speed in leveling certain types of machines? • In precision machining operations, such as grinding, do you ever find that rejects are traceable to vibration? • Would you like to forget about lagging machines to the floor to keep them from walking? • Would your worker productivity increase if you could reduce plant noise?

. . . then let us do something about the answers.

The NEW Leveling Barrymount can make profits for you out of problems you may have thought couldn't be solved. It represents a wholly new idea in mounting machinery. What it can mean to you in immediate profits is described in this new bulletin.

Write TODAY for your free copy of "LOOK—NO LAGGING!" to

THE BARRY CORPORATION
738 Pleasant Street • Watertown, Mass.

If you write maker identify as IEN - 14219

How cost-wise buyers rate
SPROCKETS and CHAIN

for drives from fractional to 40 h. p.—conventional and interchangeable tapered types

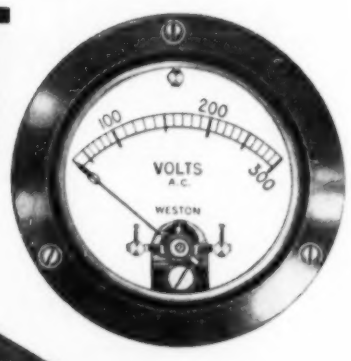
IN STOCK AT 92 BOSTON GEAR DISTRIBUTORS at Factory Prices

Look under "Gears" in the Yellow Classified Section of your Telephone Directory for the one nearest you.

Get the new BOSTON Gear Sprocket Catalog Supplement SC-2. Prices and buying information on complete line of sprockets, chain and chain breaking tool. Ask your BOSTON Gear Distributor, or write: Boston Gear Works, 63 Hayward St., Quincy 71, Mass.

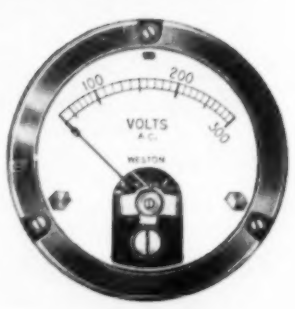
If you write maker identify as IEN - 14220

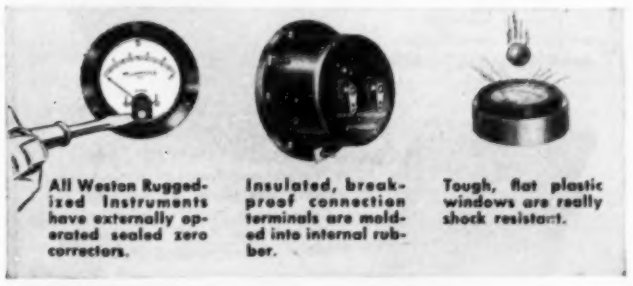
another WESTON FIRST



A-C ruggedized instruments

WESTON Ruggedized Instruments are available not only in D-C but in movable iron A-C, rectifier type A-C and thermo. *All* are supplied with essential sealed *zero correctors* — shock-resisting flat plastic windows—and connection terminals molded into internal rubber, *leakproof, breakproof and effectively insulated.* For complete details, write for bulletin. Weston Electrical Instrument Corporation, 614 Frelinghuysen Avenue, Newark 5, New Jersey.





All Weston Ruggedized Instruments have externally operated sealed zero correctors.

Insulated, breakproof connection terminals are molded into internal rubber.

Tough, flat plastic windows are really shock resistant.

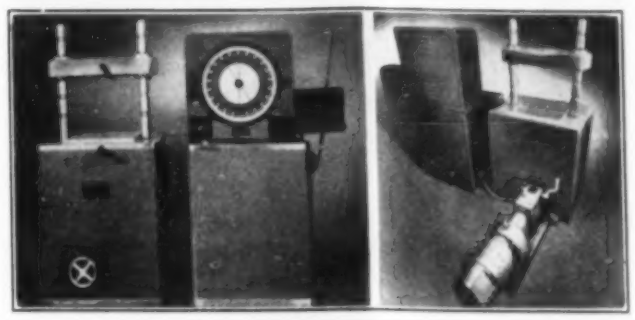
WESTON ruggedized instruments

5608

If you write maker identify as IEN - 14222

TESTING . . Universal machine rates 50,000 lb. load plus and minus

Source: BALDWIN-LIMA-HAMILTON CORP. Paschall Post Office, Philadelphia 42, Pa.



Bulletin 4206

Model FGT is a new Baldwin-Emery SR-4 universal machine capable of testing specimens of structural parts and components in tension, compression, flexure, torsion, alternating load, creep, stress relaxation and shock, up to a rated capacity of 50,000 lb. plus and minus. The opening between the two platens expands for tension, contracts for compression.

The top platen is load sensitive for both plus and minus loading through two side rods, each secured in a 25,000-lb. SR-4 load cell connected to totalize into an output circuit. The side rods are secured in the bottom platen inside the machine housing. This platen applies the load in either direction through the action of a single reversing power screw driven by a variable speed 2-hp. motor operating in a stepless range between 0.025 and 9.00 inches per minute. The moving platen is guided by roller bearings in a "strong back" housing. This housing also carries flexure plates restraining the two vertical columns against movement due to horizontal loading that can result from eccentric loading in the specimen.

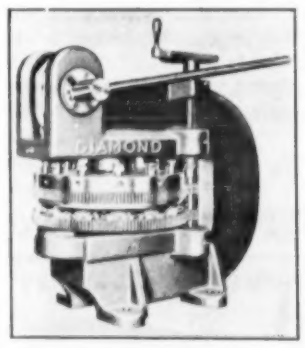
Load is indicated on an illuminated 24-in. dial with 500 graduations in each direction for tension and for compression. The dial is servo motor operated and permits range change while a test is in progress. Four ranges, with zero adjusters for each, are maximum at 0 to 50,000 lb. in 100-lb. graduations and 0 to 1,000 lb. in 2-lb. graduations. An auxiliary low range set-up can be made by employing two SR-4 500-lb. cells. Maximum is 0 to 500 lb. in 1-lb. graduations. Minimum is 0 to 10 lb. in 0.02-lb. graduations, both plus and minus, with these cells.

Vertical opening between the columns is 35 inches. Horizontal clear space between the columns is 21 inches. Working space on the machine table is 20 by 20 inches. The machine stands 86 in. above the floor. Floor space is 74 by 28 in. with an additional 29 in. for the motor at the rear. Power stroke is 8 inches. The motor can be specified to operate on 220 or 440-volt 60-cycle single-phase ac. No foundation is required.

If you write maker identify as IEN - 14223

PRESS . . Turret type machine with 12 selective punch and die sets

Source: DIAMOND MACHINE TOOL CO. 5109-13 Coffman Pico Road, Pico, Calif.



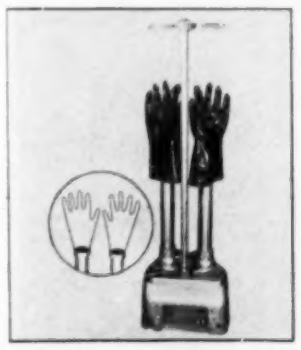
13 inch throat

Load capacity is 10 ton and maximum punch size is 1½ in. in ⅛-in. mild steel for this new hand operated turret type press. Twelve sets of punches and dies are located in the two circular heads. They are indexed to operating position at the front by turning a crank on top of the frame. The punch is brought down through the work by operating a lever on one side. This lever connects through a cam shaft to the punch ram. Each die set is marked to show its diameter and work thickness capacity to the operator.

If you write maker identify as IEN - 14224

DRYING . . Hot air blower dries out workers' boots and gloves

Source: CHICAGO HARDWARE FOUNDRY CO. 3501-5 Commonwealth Ave., North Chicago, Ill.



For quick action

Two wire forms, in the shape of hands, are now available for application on the company's Sani-Dri electric boot dryer in which twin streams of electrically heated air are blown up through tubes into boots suspended in inverted position on the dryer stand. The warm air blows into gloves, when they are placed on the forms, to dry them out quickly without danger of damage or burning.

The dryer consists of a housing that forms a base and encloses a motor driven fan and electric heating coils. The coil circuit is closed when the fan is started so heated air is immediately available for delivery through the tubes.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14225

new 44 Ways Better

A great new line of Toledos! *44 new features* are now added to the traditional accuracy and dependability of Toledo Scales. Complete range of types and capacities. Get your scale information up-to-date . . . write today for the new condensed catalog No. 2001. Toledo Scale Company, Toledo 1, Ohio.

TOLEDO
HEADQUARTERS FOR SCALES

Model 2181 —New version of the world's most widely used portable dial scale.

If you write maker identify as IEN - 14226

SEND FOR THIS NEW BULLETIN

Improved Method Centrifugal SPRAY DRYER *and* CONCENTRATOR*

CONTRACT DRYING
We invite inquiries for Contract Drying in our fully equipped Stainless Steel Plant in Chicago. Shipments can be made direct to our Railroad Switch Track or Truck Docks.

THE DRYING AND CONCENTRATING COMPANY DRYER

Improved method for DEHYDRATING

Solutions, emulsions and materials which can be handled in a liquid form including:
Chemicals
Pharmaceuticals
Milk Products
Blood or Blood Plasma
Soups, Vegetables, etc.

This complete spray drying plant employs a unique centrifugal-type spray head, and consists of a Drying Chamber, Concentrator, Air Heating Unit, Air Filter, Air Supply Fan, Powder Cooling Fans and Sanitary Pumps with variable speed drives for handling liquid material and controlling the moisture.

*CONCENTRATOR AVAILABLE SEPARATELY

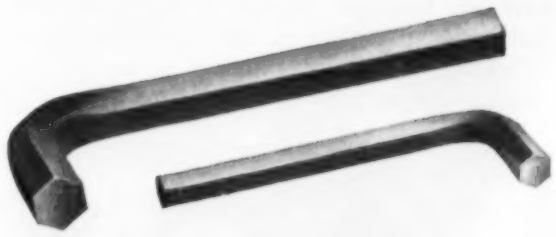
The Concentrator can be operated as a separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining natural flavors and vitamins.

Write for New FREE Bulletin 265R

DRYING and CONCENTRATING CO.
332 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

If you write maker identify as IEN - 14227

standardize on standard



UNBRAKO SOCKET SCREW KEYS

UNBRAKO Keys are suitable for use with all standard makes of hex socket screws. They are made of heat treated alloy steel; ends are burr-free and smooth, fit easily into socket; lengths are uniform, and the across flats dimensions are held to close tolerances for positive wrenching and long life.

Standard sizes are available in quantity or as sets in key folds. Write for literature. SPS, Jenkintown 14, Pa.

Our Fiftieth Year : A START FOR THE FUTURE

UNBRAKO SOCKET SCREW DIVISION

SPS
JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 14228

Simplex-TIREX PORTABLE CORDS ...via Graybar

FREE BULLETIN gives complete size, stranding and application data

Special "cured-in-lead" selenium neoprene armor gives Simplex-TIREX cords and cables distinct advantages over ordinary types: extreme flexibility without distortion . . . maximum resistance to abrasion and wear . . . uniform size for easy coiling . . . plus a satin-smooth finish that's highly resistant to water, oil, acid, sunlight and flame.

In addition, these Graybar-distributed cables and cords have markings molded right onto the jacket for positive identification as to number, size, and type of conductor being used.

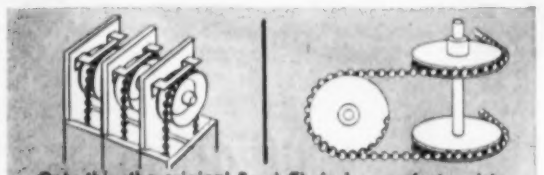
Send, today, for this handy bulletin giving complete information on all Simplex-TIREX portable cable and cords . . . or, if you prefer, check directly with your local Graybar Representative. He'll be pleased to serve you in this as well as all of your other electrical needs. *Graybar Electric Co., Inc. Executive Offices: Graybar Building, 420 Lexington Ave., New York 17, N. Y.*

Call Graybar *first* for . . . Everything Electrical — Graybar Electric Company

375-1210

If you write maker identify as IEN - 14229

Only the manufacturer of *genuine* Bead Chain offers you a new, more versatile belt drive that will accurately time and control the movement of all types of devices. Among such applications are radio and television tuners, recorders, air conditioners and timing devices. Costly gearing mechanisms can be eliminated and efficiently replaced by the specially designed sprockets that accurately fit the individual beads *without slippage and backlash.* Friction is at a minimum and tensile strength of the bead chain belt (from 15 to 200 lbs.) is very high in proportion to size and weight.



Only this, the original Bead Chain is manufactured to such close tolerances that it can be applied at low cost to U type or positive non-slip sprockets!

Write to us today for detailed information about sprockets and bead chain belts. It can save you a lot of time and money later.

THE BEAD CHAIN MANUFACTURING CO.
59 Mountain Grove St., Bridgeport, Conn.

Please send me information about Bead Chain sprocket drives.

NAME.....

TITLE.....

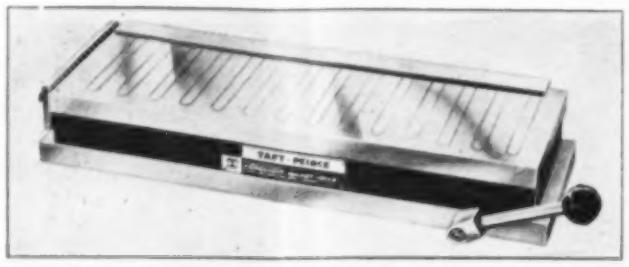
ADDRESS.....

THE BEAD CHAIN MANUFACTURING CO., Bridgeport 5, Conn.
original and world's largest producers of bead chain

If you write maker identify as IEN - 14231

CHUCK . . Permanent magnet design mounts on machine table, lever release

Source: TAFT-PEIRCE MFG. CO.
32 Mechanic Ave., Woonsocket, R. I.



Superpower is the trade name

Overall height is 2¾ in. for both of two sizes in which this new permanent magnet chuck is available. The smaller of the two has a working surface that measures 5¼ by 12¼ inches. The larger one measures 6⅜ by 18¼ inches. List prices are $160 and $207.

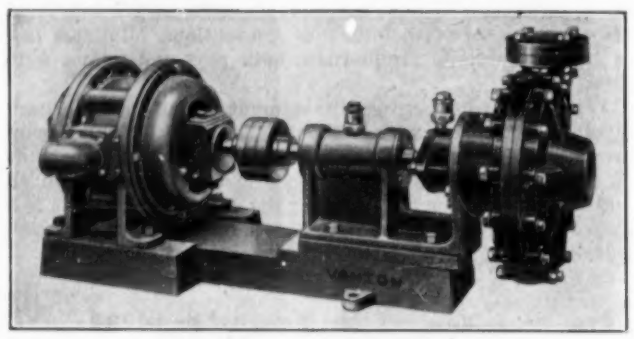
The low construction adds to the available work height beneath the wheel on a surface grinding machine. The comparatively large number of magnetic poles, in relation to the chuck length, makes an effective work holding area. Holding power is controlled by positioning a hand lever to release the work or to limit the pull on certain types of work in order to prevent distortion.

The chuck operates without heating. It is particularly suited for surface grinding. It also can be employed in light milling, planing, shaping and to hold tools for inspection and layout purposes. It will hold work for hand finishing, burring, polishing and scraping.

If you write maker identify as IEN - 14232

PUMP . . Motor driven centrifugal made of Buna-N or natural hard rubber

Source: VANTON PUMP & EQUIPMENT CORP.
7308 Empire State Bldg., New York 1, N. Y.



Temperature to 225 deg. F.

Capacities range from 15 to 100 gpm. with discharge head to 90 ft. of water in the company's new line of pumps to handle corrosive fluids. Two pump types employ an open impeller and a heavy housing, in one case, and a closed impeller and a light housing in the other. Both use a carbon seal in place of the conventional packing to permit covering the metal shaft with rubber and to eliminate most of the friction and danger of leakage. The pump is bracket mounted on an extension base that takes the motor, a main support bearing and a flexible shaft coupling.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14233

NEW ZENITH MAGNETIC SOLENOID CONTACTORS

★ SOLENOID OPERATED
★ FINE SILVER CONTACTS
★ SIMPLIFIED WIRING

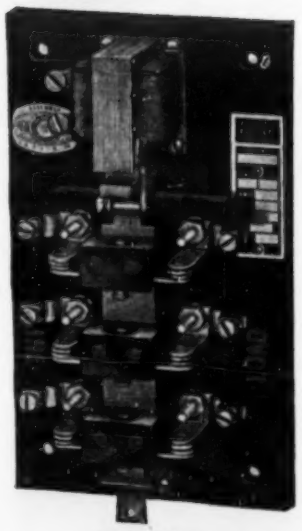
This ZENITH contactor is built to withstand the severe service demanded by loads based on Type-C lamps.

It is designed on the straight-line principle, with the solenoid being connected directly to the contact bar.

The advantage of this method of construction is its easy access to any part for quick inspection or service, without disturbing other parts.

Models: Size 1 — 25 amps. Size 2 — 50 amps.

Either size can be supplied in any number of poles.



TYPE SC 33

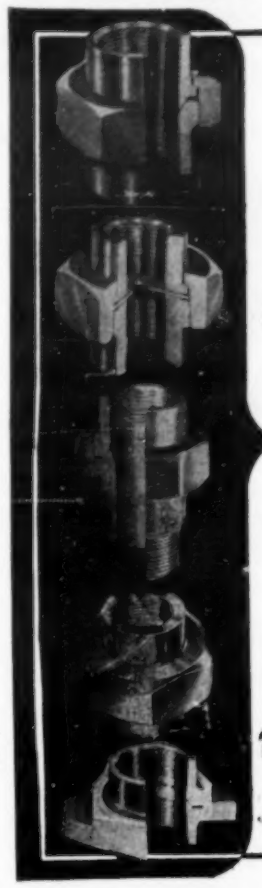
SEND FOR FREE CATALOG

This big, illustrated catalog contains all the newest items in automatic control equipment made by Zenith! Write now for your Copy!

See classified telephone directory for name of local distributor

ZENITH ELECTRIC CO.
146 W. WALTON ST., CHICAGO 10, ILLINOIS

If you write maker identify as IEN - 14234



A TYPE FOR EVERY USE!

Catawissa PERFECT SEAL Unions

for all temperatures for all pressures!

Catawissa Unions are HOT FORGED from solid rectangular steel bars to give sure-fire piping dependability! Exclusive Ball-to-Angle seat design gives A PERFECT SEAL EVEN WITH PIPE NOT IN ALIGNMENT!

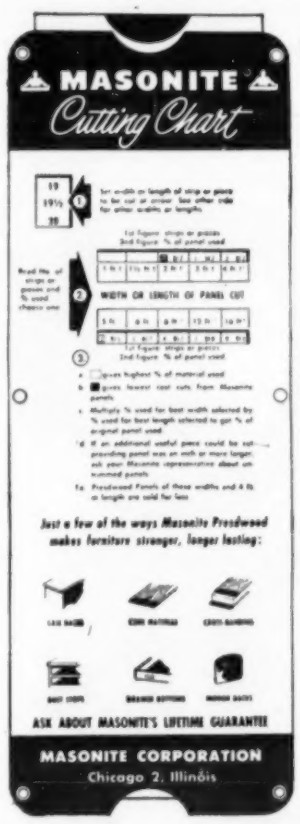
There's a Catawissa Union for every use, temperature and pressure . . . Standard and Double Extra Heavy; Orifice; Male & Female; Full Stainless, Full Alloy; Lug Nut. Choice of seats and socket weld or screwed ends.

Write for Catalog

STOCKED BY LEADING INDUSTRIAL DISTRIBUTORS

CATAWISSA VALVE & FITTINGS CO.
50 Mill St. • CATAWISSA, PA.

If you write maker identify as IEN - 14235



CUT COSTS with MASONITE'S new CUTTING CHART it's Free!

Manufacturers, designers, production men—all who use Masonite Presdwood® in production quantities—will want this pocket-sized cutting chart in easy-to-read slide rule form.

Shows which width and length of Masonite Presdwood to order for the most efficient and economical cuts. Shows some of the more popular uses of these grainless, all-wood hardboards. To get your free cutting chart, just drop a line to:

MASONITE® CORPORATION
Dept. IEN-12, Box 777, Chicago 90, Ill.

better hardboards for better products

"Masonite" signifies that Masonite Corporation is the source of the product

If you write maker identify as IEN - 14236

Strange Perhaps... But They Are Related!

Masland Duran . . . "Folded-and-Formed" Heating Elements. What's the connection? Well, in the manufacture of Duran, the popular all-plastic material for fine upholstering, the process includes heating and curing in ovens equipped with Trent Patented

"FOLDED-and-FORMED" Heating Elements

This is another example of a *quality* product produced with the help of these *quality* heating elements . . . unequalled in efficiency, durability and economy.

"Folded-and-Formed" Heating Elements are made in Standard and Custombuilt Racks to meet any installation or K. W. requirement. What is your heating problem?

TRENT INC.
Electrically Heated Industrial Equipment
247 LEVERINGTON AVE. PHILA 27 PA

If you write maker identify as IEN - 14237

. . . use NUGENT PRESSURE FILTERS!

PROTECT your equipment from the ravages of improperly filtered oil. Use Nugent Pressure filtering—a fast, economical method of assuring a constant supply of clean cool oil for vital parts. In addition to longer machine life, savings in oil by this method run as high as 99.8%. Write for complete information.

Wm. W. Nugent & Co., Inc.
418 N. Hermitage Ave. CHICAGO 22, ILLINOIS
Est. 1897

Oil Filters, Oiling and Filtering Systems, Telescopic Oilers, Oiling Devices, Sight Feed Valves, Flow Indicators . . . *Representatives in Principal Cities*

If you write maker identify as IEN - 14238

Complete with Fixtures and Conveyer

Save Labor, Solder... Increase Production

This new MOGUL unit is built to deposit silver, lead, and tin base solders in a liquid or semi-liquid form . . . faster, cleaner . . . to any constant moving part. This new automatic soldering gun replaces the soldering bath, hand soldering, and in many cases, expensive fixtures. Quickly adapted to various size parts. Adjustable to speed of work . . . gives pin-point location for cleaner seams.

BETTER WORK APPEARANCE

Deposits solder or brazing wire to the exact spot for cleaner seams. This new MOGUL soldering gun is now in wide use, saving time and money, increasing production, and turning out a better-looking product.

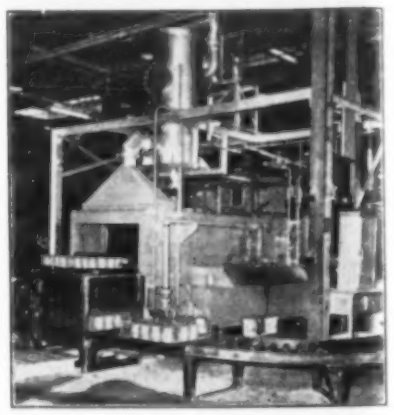
Write today for new MOGUL SOLDERING GUN bulletin

METALLIZING COMPANY OF AMERICA
Dept. IEN
3520 W. Carroll Avenue, Chicago 24, Ill.
Telephone: SAcramento 2-3710

If you write maker identify as IEN - 14240

CLEANING . . Pickling machine removes scale from brass shells

Source: INDUSTRIAL WASHING MACHINE CORP. 30-34 Main St., Matawan, N. J.



Built to order

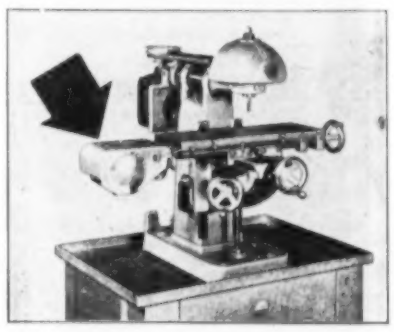
Brass shells are carried in baskets from an annealing operation over a live roller conveyor to this new spray type pickling machine. The baskets and the shells move through the machine between spray heads that direct sulfuric acid both upward and downward and then between spray heads that rinse the acid and accumulated scale and discoloration from the shell surfaces to leave them ready for further processing.

The machine has capacity for 15 sq. ft. of work surface per minute. It measures 25 by 10 by 6½ ft. and is made of Type-316 stainless steel. The work baskets measure 28 by 28 inches.

If you write maker identify as IEN - 14241

MILLING . . Power feed attachment for company's bench mounted machine

Source: BENCHMASTER MFG. CO. 1833-37 W. Rosecrans Ave., Gardena, Calif.



For any Benchmaster

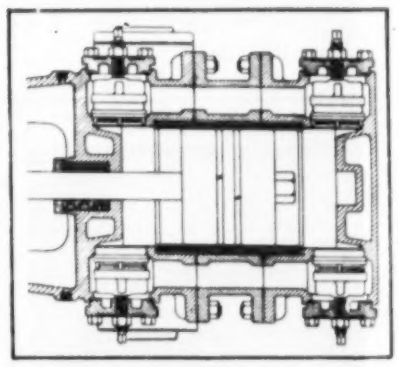
New head, employing a worm and gear unit and a small 110-volt ac. motor, assembles in a lightweight alloy housing for application on the end of the table in any of the company's hand feed milling machines. The new attachment permits table operation independent of the spindle feed. It can be set for 1.2 to 4.5 ipm. and is reversible for milling in either direction.

Stops control the length of stroke. Manual operation is not affected as the detachment can be disengaged by operating a lever. Weight is 10 pounds. Dimensions are about 4½ by 5½ by 8 inches. Price is $125.

If you write maker identify as IEN - 14242

COMPRESSOR . . For air or gas employs sectionalized cylinder design

Source: PENNSYLVANIA PUMP & COMPRESSOR CO. Bushkill Drive, Easton, Pa.



Note cylinder construction

Class ATH designates new design in the company's line of single-stage 100-lb. compressors. The new construction includes a liner that can be removed and replaced without disconnecting the inlet or the discharge airlines. It also permits any type of servicing that involves piston rings, piston or liner. Cooling water passages can be cleaned out upon removal of the sectionalized parts of the assembly.

Valves in the heads are adequately cooled. Cooling jackets, adjacent to the heads, are ample size to take care of the maximum temperature rise at these points. Water is admitted on the lower side of one head and discharges from the upper side of the other for cross flow and efficient heat exchange.

If you write maker identify as IEN - 14243

Gas turbine, operating at 36,400 rpm. on gasoline, jet propulsion fuel or diesel oil, is equipped with a reduction gear for output at 4,500 or 6,000 rpm. The engine has been developed by Solar Aircraft Co., 2202 Pacific Highway, San Diego 12, Calif. It is available in assembly with a 14-kw. generator to produce dc. or a combination of ac. and dc. The company offers it also as an individual unit. Ignition is started by a spark plug and the turbine is accelerated to about 5,000 rpm. by the generator acting as a motor. At this point momentary ignition takes place and the turbine accelerates under a combination of its own power and help from the starter to a speed of about 16,000 rpm. The motor cuts out at this point and the engine comes up to operating speed. Bulletin PR-1153 describes it.

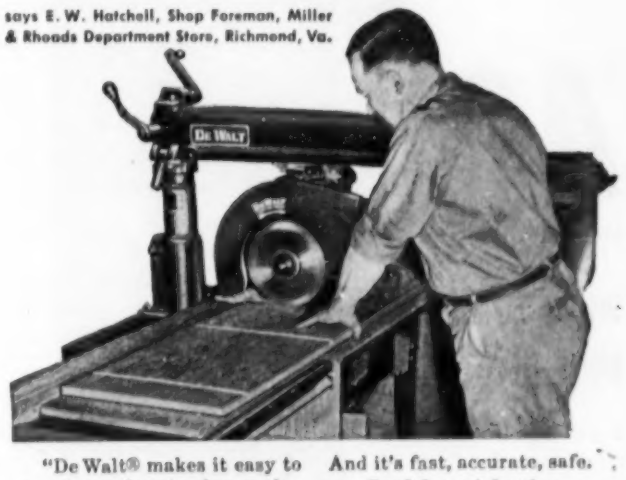
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

If you write maker identify as IEN - 14244

If you write maker identify as IEN - 14245

"AMF DeWalt is the *One-Machine* answer to our maintenance problems!"

says E. W. Hatchell, Shop Foreman, Miller & Rhoads Department Store, Richmond, Va.



"De Walt® makes it easy to meet our day-to-day maintenance needs. It's ideal for anything that comes up. That includes general fixture work; making flooring, shelving, crating; making or repairing office furniture."

You'll find De Walt brings amazing versatility to your plant maintenance operations, too. It makes many cuts—cross-cut, rip, bevel, miter, dado, shape, rout and others. And it's fast, accurate, safe.

Send for catalog to De Walt Inc., Dept. IEN-12 Lancaster, Pa.

amf products ARE BETTER . . . by design
AMERICAN MACHINE & FOUNDRY COMPANY

De Walt Inc. Lancaster, Pa.

DE WALT
POWER SAWS

If you write maker identify as IEN - 14246

42 STOCK SIZES

HALLOWELL®
SOLID STEEL COLLARS

now size-marked for easy identification

Your HALLOWELL distributor now stocks these *size-marked* precision machined solid steel collars in sizes to fit shafts from 3/16" to 3" inclusive. And positive positioning of every HALLOWELL Collar is assured by the famous self-locking UNBRAKO Socket Set Screw—the screw that won't work loose. Write for literature and the name of your nearest HALLOWELL distributor. STANDARD PRESSED STEEL Co., Jenkintown 14, Pa.

Our Fiftieth Year : A START FOR THE FUTURE

HALLOWELL POWER TRANSMISSION DIVISION

SPS
JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 14247

Restore Broken Floors . . . F-A-S-T-!

CONCRETE PATCH

SETS INSTANTLY!

TAMP SMOOTH! TRUCK OVER!

No traffic tie-ups! Simply shovel INSTANT-USE into hole — tamp and run traffic over immediately. Quick! Durable! Repair cracks and breaks in concrete floors . . . or make complete overlays. Note: Plasticizer makes INSTANT-USE easy to scoop out of container . . . easy to level, to tamp, to use! There's a Flexrock material for every floor condition — oil, acid, wet, dry! Tell us your problems!

MAIL COUPON for TRIAL OFFER and FREE HAND BOOK

INSTANT-USE

FLEXROCK COMPANY (Offices in principal cities)
3606-Z Filbert St., Philadelphia 1, Pa.

Please send me complete INSTANT-USE information, details of TRIAL ORDER PLAN and HAND BOOK OF BUILDING MANITENANCE — no obligation. (Clip and attach Coupon to Company letterhead.)

Name..... Title.....

Company.....

Address.....

If you write maker identify as IEN - 14248

See

400

ways to improve your plant

• 400 ways to improve your plant? More than likely *thousands* by the time you've gone through all the exhibits at the 5th Plant Maintenance and Engineering Show. This is your chance to see the latest developments in plant maintenance and engineering—presented to you by more than 400 leading companies.

• A four day trip to Chicago in January is a must for every plant executive concerned with the materials, equipment, supplies and services essential to maintaining his plant at top operating efficiency. Mail the coupon today for your copy of the Show Guide and Tickets.

Plant Maintenance and Engineering Conference

You are invited to participate in the 5th Plant Maintenance and Engineering Conference. Top authorities will discuss plant operating problems in a comprehensive series of sessions. Conference sessions are concurrent with the show.

Chicago Jan. 25-28 1954

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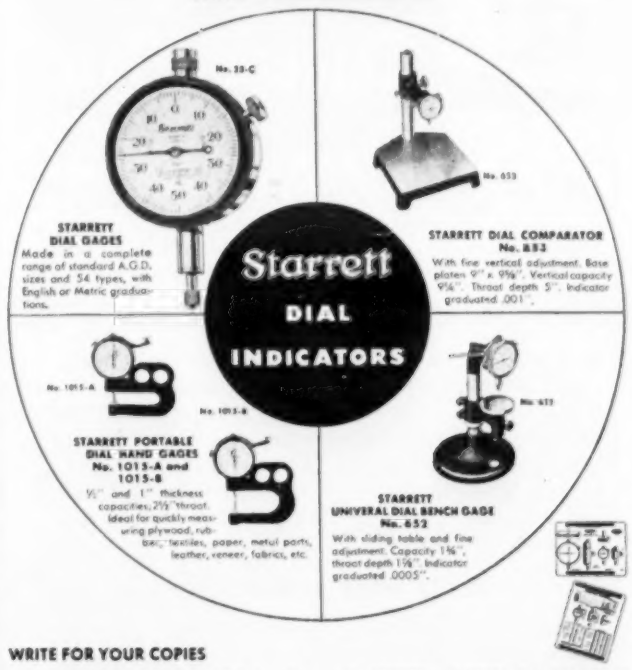

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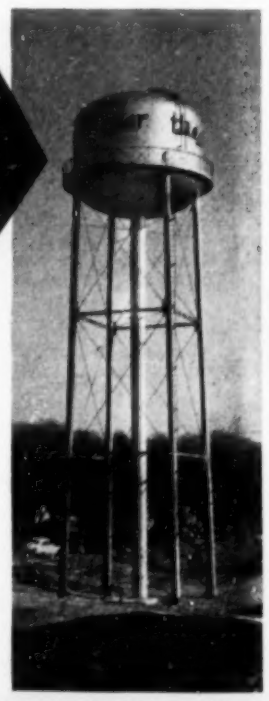

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WITH ...
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JUST FLUSH IT ON!
Stops Concrete Dusting
Resists Acids & Grease
Helps Prevent Ruts and Holes
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Building Maintenance Materials since 1922
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stop coasting, *add output*

with STEARNS MAGNETIC DISC BRAKES

Stopping motors quickly is a key factor in cutting waste time — stepping up production. Here are a few important reasons why America's leading motor makers and design engineers specify Stearns magnetic disc brakes.

Wide size range — for 1/6 to 100-hp. motors, AC or DC. 1.5 to 7500 lb. ft. torque range.

Three housing types — Explosion proof, water and dust-tight, standard. Vertical or horizontal, motor or floor mounting.

Easy adjustment — Single nut for torque, single stud for lining wear. Long-wearing lining easily replaced.

Fast stop — Positive spring action on pressure plates.

Quick release — Instantaneous magnetic pull — eliminates drag.

All major motor manufacturers either supply Stearns brakes exclusively or furnish on request. Write for full details. 1057

MAGNETIC EQUIPMENT FOR ALL INDUSTRY

STEARNS MAGNETS

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FAST... POSITIVE IDENTIFICATION

For a few cents per pipe, you can equip your entire plant with Brady QUIK-LABEL Pipe Markers. You can get a uniform system of pipe identification based on A.S.A. Standard A13. Names of materials printed in large black letters on correct A.S.A. background colors — no hand stenciling, painting, or hard to remember codes. Anyone who can read can tell at a glance the pipe contents and direction of flow. Over 235 different markers and direction arrows in stock. Specials made to order.

Brady QUIK-LABELS stick without moistening—applied in a jiffy, Silicone Plastic treated to resist dirt, grime, moisture—for indoor or outdoor service.

Brady Pipe Markers leave no room for doubt . . . or TRAGEDY.

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MANUFACTURERS OF SELF-STICKING PRODUCTS

W.H. BRADY COMPANY

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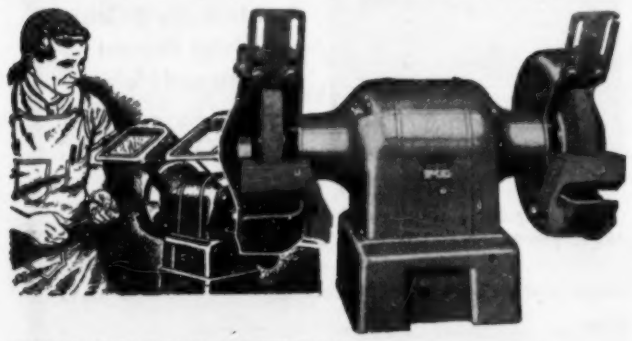
Black & Decker Bench Grinders handle wide variety of jobs

TOWSON, MD.—Custom-powered by B&D-built constant-speed motors, Black & Decker Bench Grinders speed up job after job. They sharpen chisels, twist drills, and other tools; handle many types of grinding and metal removal; with wire-wheel brushes clean gummy or rusty parts; prepare surfaces for painting; buff and polish plated metal surfaces. Streamlined for more work clearance and less weight, B&D Bench Grinders feature adjustable U-shaped tool rests for better tool sharpening support . . . strong steel wheel guards for extra safety. Three models: 6", 8", 10" wheel diameters, ½ to 1 H.P. For demonstration, see your nearby B&D distributor. For free literature, write: **THE BLACK & DECKER MFG. CO.**, 608 Pennsylvania Ave., Towson 4, Maryland.



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PORTABLE ELECTRIC TOOLS

"I WISH I HAD"

CONSULTING . . "I wish I had contact with a manufacturer or a group interested in obtaining manufacturing knowledge of vitreous enamelled or cement coated, wire wound power resistors. I am located in Burbank, Calif." **IEN W-96**

ENGINEER . . "I wish I had contact with a manufacturer who requires the services of a plant engineer with a background of construction, plant layout and plant maintenance. I am at present in Massachusetts." **IEN W-97**

ENGINEER . . "I wish we had contact with a technical man whom we could employ as chief engineer in our Mid-West plant, where we manufacture roofing felt, asphalt roofing and related products. He would be in charge of maintenance. He would assist in the design and installation of new or improved equipment and would have direct supervision of all engineering and staff relationships with the maintenance departments and of all utilities. He would report to the Vice-President of Manufacturing. We will expect to pay moving expenses. The salary is between $8,000 and $10,000." **IEN W-98**

NEW PRODUCT . . "I wish I had a manufacturer interested in purchasing my patent safety passing light for motor vehicles. It is patent 2311743. It mounts on the end of the left front wheel spindle, directs light downward to illuminate the wheel and the ground." **IEN W-99**

SURPLUS . . "I wish we had a buyer for 1,000 lb. of bronze bar stock measuring ⅝ by ⅞ in. in section. The stock is located in Brooklyn, N. Y." **IEN W-100**

SURPLUS . . "I wish we had a buyer for 12,000 flat head bright wood screws No. 10 by 2 in. and for 6,250 pieces of standard Masonite measuring ¼ by 4⅞ by 23⅞ inches. Both are in storage in Westerville, Ohio." **IEN W-101**

SURPLUS . . "I wish we had contact with an outfit with whom we could swap our IBM Electromatic typewriter with its wide carriage, billing attachment and Gothic type for a standard model Electromatic. We also are prepared to sell our machine. We are in Milwaukee." **IEN W-102**

SURPLUS . . "I wish we had a buyer for 15,000 ft. of Dekoron Tenite plastic coated steel tube measuring 1 in. in outside diameter. The tube is in 19 ft. lengths and is coated with 1/32 in. of gray Tennessee Eastman Tenite II plastic. It is in storage in Elizabeth City, N. C." **IEN W-103**

SURPLUS . . "I wish we had a buyer for an electric heater employed to heat paint and lacquer prior to spray application. The heater is in storage in Brooklyn, N. Y., as we have discontinued our spray operations." **IEN W-104**

Merry Christmas

Say It With U. S. Savings Bonds

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Here's how to EXHAUST FUMES

Bifurcator is a motor-driven fan in a split housing, for exhausting hot, corrosive, flammable or explosive gases. Motor is in isolated chamber around which exhaust fumes are by-passed, so motor stays clean, cool and accessible. Bifurcator Fans install just like a section of duct, at any angle. Built with fan wheels 12" through 48" in diameter, with capacities to 45,000 CFM. Ask your DeBothezat representative or write for illustrated catalog.

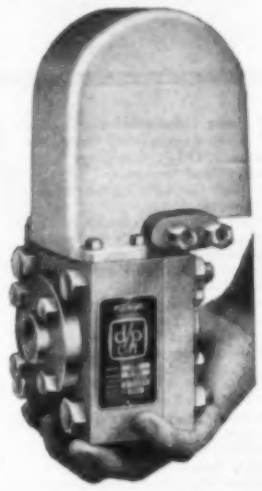
DeBothezat Fans

Division of AMERICAN MACHINE AND METALS, INC.

East Moline, Illinois

If you write maker identify as IEN - 14261

SIMPLER FLOW MEASUREMENT in the palm of your hand



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If you write maker identify as IEN - 14262

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SEE HOW OTHERS SAVE—AND HOW YOU CAN, TOO!

SEE *. . . how easily YOU can save countless hours of equipment "downtime" due to delayed delivery of replacement tools and dies . . . how to save critical materials by rebuilding all types of worn dies . . . how to revamp punches and dies by welding, saving cost of redesign . . . how to weld broken tools to operate "good as new" instead of scrapping . . . how to avoid complete retooling formerly caused by minor design changes . . . how welding builds up dies out of several components, eliminates high machining costs, and permits use of cheaper base materials for non-working surfaces.*

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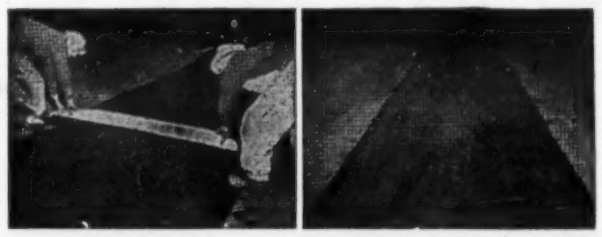
FLOORS LAID TODAY • READY FOR USE IN 24 HOURS



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